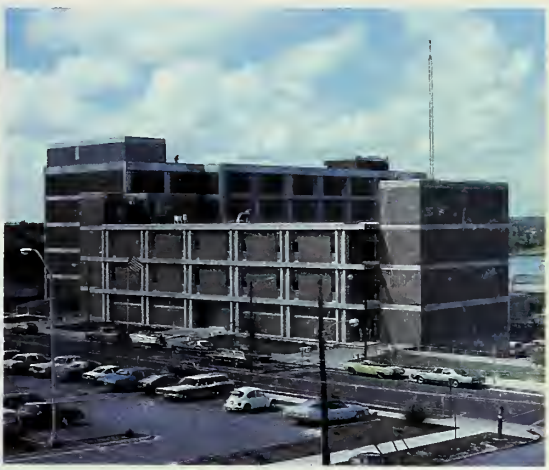
CAPE FEAR TECHNICAL INSTITUTE

Wilmington, North Carolina

CATALOG 1986-1987



State Board of Education
Raleigh, North Carolina

To Whomsoever These Presents May Come
Greetings: Know Ye That

Cape Fear Technical Institute

Is Chartered

By authority of the General Assembly of the State of North Carolina under the terms and provisions of Article 115-A of the General Statutes of said State as a public institution of the North Carolina Community College System having been Originally established on the 3rd day of April, in the year of 1958 as a tax supported institution under the style and title of

Wilmington Industrial Education Center.

In Witness Whereof and Certification Thereto, we the undersigned have subscribed our names this 4th day of June, Anno Domini 1964.

DIRECTOR
DEPARTMENT OF COMMUNITY COLLEGES

CHAIRMAN
STATE BOARD OF EDUCATION OF NORTH CAROLINA

CAPE FEAR
TECHNICAL INSTITUTE

411 North Front Street

Wilmington, N. C. 28401

Phone 919-343-0481

Cape Fear Technical Institute is a member institution of the North Carolina Department of Community Colleges—An accredited member of the Southern Association of Colleges and Schools—and is accredited by the North Carolina State Board of Education.

Catalogue of Information

1986-1987

"ADMISSION TO ANY AND ALL EDUCATIONAL PROGRAMS OFFERED BY CAPE FEAR TECHNICAL INSTITUTE IS MADE WITHOUT REGARD TO RACE, COLOR, SEX, RELIGION, NATIONAL ORIGIN, PHYSICAL HANDICAP OR OTHER NON-RELEVANT FACTORS."

General Information .....White

Technical Curricula .....Green

Trade Curricula .....Yellow

Extension & General Adult Division .....Blue

VOLUME XXI **MARCH, 1986**

PRIVACY RIGHTS ACT OF PARENTS AND STUDENTS

PUBLIC LAW 93-380

Cape Fear Technical Institute adheres to the Guidelines developed by the Department of Health, Education and Welfare regarding the Privacy Rights of Parents and Students.

The Institute provides students and parents of dependent students access to official records directly related to them and limits dissemination of personally identifiable information without the student's consent. Students enrolled at Cape Fear Technical Institute may review guidelines and procedures regarding Public Law 93-380 in the offices of Admissions and Records. Procedures for challenging such record may also be obtained in these offices.

NON-DISCRIMINATION POLICY

Cape Fear Technical Institute's Board of Trustees and Staff recognize the importance of equal opportunity in all phases of the Institute's operations and have officially adopted a position of non-discrimination on the basis of race, color, age, religion, national origin, physical handicap, or other non-relevant factors. This policy applies to both students and employees at all levels of the school's operations.

GIFTS TO THE INSTITUTE

The Cape Fear Technical Institute's Board of Trustees has approved the creation of the Cape Fear Technical Institute Foundation. Gifts made to this foundation are tax deductible for income tax purposes as provided by law. Anyone desiring information regarding gift opportunities, please contact the office of Public Information/ Institutional Development, Cape Fear Technical Institute, 411 North Front Street, Wilmington, North Carolina 28401, telephone 919-343-0481.

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FORWARD

On behalf of the faculty, staff, trustees, and students, I want to extend to you an invitation to become a part of the outstanding institution. This catalog will furnish you with information that may well assist you in designing your personal and career goals. Most of the information you will need about Cape Fear Technical Institute is contained in this catalog.

You will find that Cape Fear Technical Institute has a modern physical plant containing shops, laboratories, and classrooms designed to meet your educational and training needs. The facilities are among the finest in the North Carolina community college system.

The members of the faculty and staff are well qualified and are anxious to assist you in reaching your educational goals by providing quality instruction and service.

If you decide to enroll at Cape Fear Technical Institute, I am sure that you will find it is one of the finest institutions of its kind.

If you need additional information about CFTI, please feel free to call on me or any member of the faculty and staff.

Dr. E. Thomas Satterfield, Jr.
President

NOTE

The Cape Fear Technical Institute issues this catalogue for the purpose of furnishing prospective students and other interested persons with information about the institution and its programs. Announcements contained herein are subject to change without notice and may not be regarded in the nature of binding obligations on the Institute or the State. Efforts will be made to keep changes to a minimum, but changes in policy by the State Board of Education, the Department of Community Colleges, or by local conditions may make some alterations in curriculums, fees, etc., necessary.

VISITORS

Visitors, and in particular prospective students, are always welcome at Cape Fear Technical Institute. The student affairs office will provide guide service for groups or individuals on week days between 8:00 a. m. and 5:00 p. m. The school is open until 10 p. m. and individuals may visit at their convenience. Questions about the school and its programs will be answered by someone from the Student Affairs office.

STATEMENT OF POLICY

The contact hours shown in the catalogue are minimal. It is a policy of this institution to permit students to enroll in additional subjects and laboratory work beyond those shown in the catalogue.

When, in any quarter, the total weekly contact hours listed are fewer than twenty-five hours in a technical curriculum and fewer than thirty hours in a vocational trade curriculum, a student may enroll on request, for additional instructional hours deemed by the institution to be consistent with the program and appropriate to the student to make up twenty-five hours per week in a technical curriculum or sufficient hours of attendance to make up thirty hours per week in a vocational trade curriculum. Apprenticeship training may be appropriate for graduates of some curriculums.

INSTITUTIONAL MEMBERSHIPS

An Institutional Member of the American Association of Junior Colleges.

An Institutional Member of the American Technical Society.

An Institution of the North Carolina Department of Community Colleges.

Accredited by the Southern Association of Colleges and Schools.

Accredited by the North Carolina State Board of Education.

GENERAL INFORMATION

CAPE FEAR TECHNICAL INSTITUTE

SCHOOL CALENDAR

1986-87

FALL QUARTER

Fall Quarter Pre-registration for 1986	August 4 thru 6, 1986
Freshmen orientation	August 29, 1986
Freshmen registration	September 2, 1986
Returning students registration	September 3, 1986
Classes begin	September 4, 1986
Classes end	November 19, 1986

WINTER QUARTER

Pre-registration for Winter Quarter	November 3 thru 6, 1986
Registration	November 19 and 20, 1986
Classes begin	November 24, 1986
Classes end	February 24, 1987
Holidays	November 27 and 28, 1986
Holidays	December 22, 1986 thru January 2, 1987

SPRING QUARTER

Pre-registration for Spring Quarter	February 9 thru 12, 1987
Registration	February 24 and 25, 1987
Classes	begin March 4, 1987
Classes end	May 21, 1987
Holidays	April 17 and 20, 1987
Holiday	May 25, 1987

SUMMER QUARTER

Pre-registration for Summer Quarter	May 4 thru 6, 1987
Registration	May 19 and 20, 1987
Classes begin	May 28, 1987
Classes end	August 13, 1987
Holiday	July 3, 1987

Fall Quarter Pre-registration for 1987	July 27, 28 and 29, 1987

STATE ADMINISTRATION

STATE BOARD OF COMMUNITY COLLEGES

Mrs. Barbara K. Allen.....Raleigh, NC
Mrs. Joanne W. Bowie.....Greensboro, NC
The Honorable Harlan E. Boyles.....Raleigh, NC
Mr. Asa B. Dail.....New Bern, NC
Mr. Richard L. Daugherty.....Research Triangle Park, NC
Mr. Donald C. Eudy.....Waynesville, NC
Mr. John A. Forlines, Jr.....Granite Falls, NC
Mr. Grady G. Franklin, Jr.....Mooresboro, NC
Ms. Martha N. Granger.....Wilmington, NC
Mr. Edward J. High.....Charlotte,NC
The Honorable J. P. Huskins.....Statesville, NC
The Honorable Robert B. Jordan, III.....Raleigh, NC
Mr. L. N. Kelso.....New Bern, NC
Mr. William S. Murdock.....Salisbury, NC
Mr. William C. Parton.....Drexel, NC
Mr. D. Wayne Peterson.....Tarboro, NC
Mr. J. Samuel Roebuck.....Elizabeth City, NC
Mr. William F. Simpson.....Reidsville, NC
Mr. Edward J. Snyder.....Albemarle, NC
The Honorable Carl D. Totherow.....Winston-Salem, NC

LOCAL BOARD OF TRUSTEES

Mrs. Barbara Schwartz, Chairman.....New Hanover County
Dr. Mary S. Bell.....Pender County
Donald P. Blake.....New Hanover County
Richard L. Burnett.....New Hanover County
Dr. J. Marshall Crews.....New Hanover County
Jefferson H. Faucette.....New Hanover County
Robert Lee Henry.....New Hanover County
Howard Holly.....Pender County
Mrs. Mary E. Hood.....New Hanover County
Mrs. Twila M. Jones.....Pender County
Wilber W. Kirk.....New Hanover County
Mrs. B. Constance O'Dell.....New Hanover County
Mrs. Kathy Garris.....Administrative Assistant to the Board
Isaiah Brown.....President, CFTI Student Government Association

ADMINISTRATION

Dr. E. Thomas Satterfield, Jr.....President
James D. Bartlett.....Assistant to President
Mrs. Kathy Garris.....Administrative Assistant for Board Affairs
Mrs. Macque C. Cockman.....Director of Attendance Records Audit Section
Ralph E. Outcalt.....Director of Computer Services
Mrs. Susan P. Rae.....Computer Educational Assistant/Instructor
Mrs. Ada E. Davis.....Public Information/Developmental Officer
Mark D. O'Neal.....Director of Evening Programs—Continuing Education
Matthew C. Donahue.....Dean of Curriculum Programs
Dr. Roger H. Averette.....Assistant Dean of Curriculum for Technical Education

James R. Nunn.....Assistant Dean of Curriculum for Vocational & New Industry Programs
John R. Kennedy.....Acting Dean of Evening Programs
Captain Stephen J. Beuth.....Director of Ship Operations
Carl E. Malpass.....Dean of Student Affairs
Henry J. Bethea.....Evening Registrar
Charles F. Hunnicutt.....Director of Admissions
Elizabeth McPhaul.....Counselor
Joseph S. Moorefield.....Evening Counselor
Thomas A. Olson.....Veteran Affairs Coordinator
Dr. Mary B. Rea-Poteat.....Counselor—Coordinator of Career Planning, Placement and Testing
Miss Naomi Randolph.....Director of Financial Aid
Odis R. Stewart.....Director of Student Activities
Christopher K. Zingelmann.....Registrar
Kenneth D. Futch.....Dean of Continuing Education
Michael G. Bonner.....Director of Continuing Education—West Pender County
Ernest D. Bryant.....HRD—Coordinator/Director of Continuing Education — East Pender County
John J. Braswell.....Director of Continuing Education—Central Pender County
Dan H. Hickman.....Director of Continuing Education—New Hanover County
Mrs. Barbara Yount.....Director of Continuing Education/ABE New Hanover and Pender Counties
Ms. Nell Pavelchak.....Director of Public Health & Safety Programs
S. C. Coleman.....Dean of Fiscal Affairs
Stephen R. Burtt.....Director of Fiscal Affairs
Marvin E. Huddleston.....Director of Purchasing
Mrs. Deborah Britt.....Bookkeeper
James D. Long.....Shipping & Receiving Technician
Dale G. Rusmisell.....Equipment/Inventory Technician
Fitzhugh Fennell.....Personnel Director
Ms. Gwendolyn M. Murray.....Personnel Benefit Specialist
Robert Williams.....Visiting Artist/Saxaphonist

AREA COORDINATORS

Ralph W. Roper.....Law Enforcement Training

LIBRARY LEARNING RESOURCE SERVICES
LIBRARY

Dr. Willie B. McGough, Jr.....Head Librarian
Roy T. Barnhill.....Assistant Librarian
Ms. Anne Odin.....Library Technician

AUDIO VISUAL SERVICES CENTER

William A. Crawford.....Audio Visual Librarian
Nixon B. Howard.....Audio Visual Technical Coordinator
Janet F. Howard.....Audio Visual Technician

PROGRAMMED INSTRUCTION CENTER

Miss Charlotte Dexter.....Director of Programmed Instruction Center
Thomas J. Bradshaw.....Coordinator
James Canty, Jr.....Coordinator

STAFF-SPECIAL PROGRAMS

Thomas E. Fields.....Law Enforcement Training
Ms. Gayle Harvey.....Human Resources Development & Placement Specialist
Mrs. Thera S. Lanier.....Adult Basic Education Instructor
Charles W. Miller.....Coordinator of Disabled & Handicapped Programs
Ms. Gwen G. Morris.....Vocational Evaluator-Disadvantaged Handicapped Programs
Robert N. Russell.....Law Enforcement Training
Clarence L. Smith.....Human Resources Development & Orientation & Motivation Instructor
Mrs. Frances Teachey.....Industrial Sewing Instructor

FACULTY BY DIVISIONS

BUSINESS EDUCATION

Sessoms, Robert W., Division Director.....Accounting
Armstrong, Mrs. Gwendolyn M.....Business Related
Barefoot, Mrs. Emily W.....Typing & Related
Batchelor, Mrs. Sherry C.....Business Related
Canty, Dr. Katie G.....Business Related
Dowless, Ms. Mary B.....Business Related
Hankins, Mrs. Faye B.....Business
Higgins, Edward B., Jr.....Paralegal
Tallant, James A.....Business Related
Tyndall, Roland E.....Typing & Related

ENGINEERING

Batts, Chauncey W., Jr., Division Director.....Drafting
Bailey, James B.....Criminal Justice
Buck, Dale R.....Chemistry
Buis, Charles G.....Drafting
Coleman, William H., Jr.....Electronics
Gonzalez, John C.....Electronics
Holt, Russell L.....Electronics
Lapsansky, Charles S.....Electronics
McGowan, Delmar A.....Drafting
Price, Henry E.....Electronics
Simmons, Wayne P.....Electronics
Spencer, Joel S.....Drafting
Taylor, Donald L.....Electronics
Thompson, Ms. Cathy L.....Chemical Technician
Weddle, Danny J.....Instructor/Technician
Wingfield, Ms. Stacy F.....Drafting Technician

MARINE DIVISION

Foss, Edward L., Division Director.....Oceanography
Brandi, Raymond P.....Marine Science
Carter, Ms. Shirley Marie.....Marine Technician
McClelland, Roy L.....Marine Related
Martin, James R.....Biology
Miller, Mark V.....Fishing Trades
Monaghan, Dave C.....Marine Technician

HEALTH EDUCATION

DuMond, Mrs. Sandra Z. ..... Nursing Education
Jackson, Mrs. Marjorie S. ..... Nursing Education

RELATED INSTRUCTION

Averette, Dr. Roger H. ..... Assistant Dean of Curriculum for Technical and Developmental Programs
Boykins, Ms. Vivian M. ..... English
Bright, Ladson W. ..... English
Daniels, Mrs. Orangel J. ..... English/Related
Jorgensen, Philip C. ..... Mathematics & Science
Kellagher, Richard C. ..... Trade Related
Mangum, William A. ..... Mathematics
Miller, Dr. Donald C. ..... Social Science
Poe, Gene B. ..... Mathematics
Rowell, Mrs. Pearl R. ..... Social Science
Seeger, David C. ..... Related Subjects
Snow, Melvin W. ..... Mathematics
Thompson, Aubrey C., Jr. ..... Physics
Thornton, Ms. Joyce L. ..... English
Tolley, Ms. Donna S. ..... Developmental Studies

VOCATIONAL

Nunn, James R. ..... Assistant Dean of Curriculum for Vocational and New Industry Programs
Beuth, Steve J. ..... Commercial Fishing/Marine Maintenance and Related Occupations
Bowie, Ben A. ..... Machinist
Bowie, Paul T. ..... Industrial Maintenance
Geary, Bryan Cal ..... Marine Mechanics
Grant, Alexander F. ..... Welding
Horton, Grag ..... Air Conditioning, Heating and Refrigeration
Johnson, J. Randy ..... Machinist
Parlatore, Angelo Jerome ..... Automotive Mechanics
Smith, David L. ..... Light Construction
Smith, James A. ..... Waterfront Equipment Maintenance Technician
Thomas, David J. ..... Industrial Electricity
Tillett, Wiley S. ..... Automotive Mechanics
Waller, Mike ..... Assistant Marine Equipment Technician
West, Richard E. ..... Welding
Williams, Alvin R. ..... Welding

SHIP'S PERSONNEL

Beuth, Stephen J. ..... Captain

DECK DEPARTMENT

Roberts, John C. ..... Second Mate
Fisher, Leroy ..... Boatswain
Clark, Jerome ..... Ordinary Seaman
Burris, Donald R. ..... Chief Cook

ENGINEERING DEPARTMENT

Bordeaux, Dewey L. ..... Chief Engineer
Batson, Joseph ..... First Assistant

THE SCHOOL

HISTORY

The Cape Fear Technical Institute was established as the Wilmington Industrial Education Center in 1959 under the direction of the late George H. West. It was raised to technical institute status on July 1, 1964.

Cape Fear Technical Institute is one of more than fifty such institutions operated by the State under the direction of the State Board of Education and the Department of Community Colleges in Raleigh. The school is administered by a local Board of Trustees.

Authority for the establishment and operation of these institutions is found in Chapter 115A of the General Statutes of North Carolina and the amendments thereto.

The Institute was one of the original industrial education centers and was operated from 1959 through the 1963 school year by the New Hanover Board of Education. Following a favorable vote of the citizens of the County on a $575,000 bond issue to provide a technical institute facility, and a 2 cents tax levy for its support, the State Board of Education authorized $500,000 in matching funds from the 1963 Vocational Education Act Appropriation to be applied toward the facility construction. The Institute continued to operate in the County owned buildings until new facilities were completed in the summer of 1967. The new facilities included a four story main building, a separate automotive shop, and a pier and docking facility for the school's training vessels. In the general election of 1972 the citizens of New Hanover County approved a bond issue of $3,675,000 for the expansion of Cape Fear Technical Institute's facilities. The new classroom and shop facilities have been completed allowing for valuable classroom, shop and office space.

The number of people served annually by the Institute has risen from approximately 750 during its early years of operation to more than 19,000 in recent years. The school has been and continues to be dedicated to total education for adults in the area it serves.

PURPOSE

Cape Fear Technical Institute is comprehensive in its purpose and in its plan to meet the needs of the adult population within the community it serves. The Institute provides flexible programs designed to meet these adult educational needs through:

(1) A continuing concern for the total welfare of each student including his/her physical and mental health, development of capabilities and talents, establishment of relationships with other

persons, and motivation for progress in intellectual understanding.

(2) Various vocational-technical and trade programs which will prepare a student for employment in a specialized field.
(3) Courses and programs for the adult student who wishes to further his/her education at the elementary and secondary level, or for an adult who wishes to improve his or her economic, social, or cultural needs.
(4) Programs to serve new and existing industries by training new employees and upgrading others.
(5) Programs to serve the community by training employees for public services.
(6) Continuous curriculum study and revision of existing programs to meet the needs of the community.

Finally, the Institute strives to live up to the "open door" admissions policy established by the North Carolina Department of Community Colleges. The Institute is concerned with the student's willingness to do, and with providing entry programs at all capability levels. The Institute encourages the student to develop abilities and attitudes which will make him/her feel that he/she is a participating, worthwhile, dignified member of his or her community.

LOCATION

The Cape Fear Technical Institute is conveniently located in the heart of Wilmington on North Front Street. The campus extends from Front Street to the deep water channel of the Cape Fear River, and is bordered by Red Cross Street on the North and Walnut Street on the South. Some parking space is available on the campus, public transportation is nearby, and hotels, motels, restaurants, theaters, and shops are all within easy walking distance.

The main building houses the administrative offices, business office, classrooms, and part of the shop areas. The new south wing houses the student affairs office, library, laboratories, classrooms, and the student lounge area. An additional shop building is located at the water's edge, and a pier extends out to the deep-water channel to provide mooring for the school's training vessels. The buildings are of all-masonry construction, and designed especially for trade and technical programs. All classrooms and offices are air-conditioned for year-round comfort.

An additional building has been provided by the county which houses the Electronics, Instrumentation, and Computer Engineering curriculums. This building is located approximately two blocks north of the main campus. The Wilmington area has abundant recreational facilities, excellent beaches, salt-and fresh-water fishing, good

hunting area; year-round golf courses and tennis courts are all located within a few minutes driving range.

SHOPS & EQUIPMENT

The shops and laboratory areas were carefully planned to provide large, well-ventilated, and industry-type training facilities.

Equipment for all shops, laboratories, test areas, drafting rooms, and for the training ships was selected to conform with the current tools and devices of industry. Students will find that ample opportunity is provided in all trade and technical curricula for skill-building practice in using modern, industrial, production and testing tools and machines. Specially planned and equipped classrooms are conveniently located for study of the academic related subjects, and a well-stocked technical library is available both day and night for use by faculty, students and area residents.

QUARTER SYSTEM

The school year is divided into four quarters of 55 school days. Credits earned are in quarter hours. See course description section for number of credits required for graduation in each program.

AREAS OF STUDY

Technical and trade curriculums which the Institute is presently authorized to offer include the following:

Technical Curricula:

See Technical section (Green) of catalogue for descriptions.

Basic Law Enforcement (Certificate Program)
Business Administration
Chemical Technology
Computer Engineering Technology
Criminal Justice—Protective Services Technology
Electronics Engineering Technology
General Occupational Technology
General Office
Instrumentation Technology
Marine Technology
Mechanical Drafting and Design Technology
Paralegal Technology
Secretarial—Engineering and Technical

Persons graduating from these technical curriculums are awarded the Associate in Applied Science Degree.

Vocational Curricula:

See trade section (Yellow) of catalogue for descriptions.

Air Conditioning, Heating & Refrigeration
Automotive Mechanics
Boat Building
Child Care Worker (Specialty Programs)
Commercial Fishing
Industrial Electricity
Industrial Maintenance
Light Construction
Machinist
Marine and Diesel Mechanics
Marine Maintenance and Related Occupations
Practical Nursing
Welding

A diploma is earned by graduates of these vocational programs.

ENTRANCE REQUIREMENTS

All correspondence concerning admissions should be addressed to the Admissions Office.

ADMISSION OF NEW STUDENTS—The Cape Fear Technical Institute follows the "Open Door" policy established by the State Board of Education. This policy provides for the admission of any North Carolina citizen who has reached the age of 18, or whose high school class has graduated. This policy is based on the belief that the school has something to offer at all educational levels and that through effective guidance a person can find his or her place in the proper educational program.

While a high school education or its equivalent* is desirable for admission to the full-time training programs, some exceptions are made for individuals whose age and maturity make success in a diploma program likely.

See individual course description in this catalogue for specific admission requirements, prerequisites, etc., for each course.

ADMISSION CRITERIA

1. Previous Education—Each applicant shall request his or her high school to submit a transcript showing grades earned. Those who are high school seniors should have their school submit a transcript showing work through the first semester of the senior year as soon as possible after the semester has ended, and a supplementary transcript showing graduation at the close of school.

Applicants who have the high school equivalency certificate* should submit a copy of the certificate, but should also ask their high school to send a transcript of all work done at the school.

Transcripts of previous education in colleges, technical institutes, etc., should also be submitted to the school. All transcripts must come directly from the school to the Technical Institute and not from the applicants themselves.

2. Placement Test—Students are required to take placement test/s prior to entrance. Qualified counselors at the school use the test results in helping individuals decide which course of study to follow. There is no charge for the test, nor for the counseling service.

3. Personal Interview—The personal interview is beneficial to both the applicant and to school officials in that it affords an opportunity to "get acquainted." The applicant has an opportunity to ask questions about the school and its programs while school officials make an effort to evaluate the applicant's interest in and capability to pursue the program of study applied for.

4. Medical—Complete the medical form as required by the school for specific courses of study only after being accepted.

5. OTHER—In addition to the General Admission requirements, it may also be required that certain students with academic deficiencies take additional course work to strengthen their weaknesses.

Certain curricula may have special requirements in addition to the above stated criteria.

ADMISSION OF OUT-OF-STATE STUDENTS

Out-of-state students are admitted under the same regulations as others. Tuition and fees are established by the State Board of Community Colleges.

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*See page 178 in General Adult Education Section of this catalogue for details about the high school equivalency certificate.

1. General. The tuition charge for legal residents of North Carolina is less than for non-residents. To qualify for in-state tuition a legal resident must have maintained his or her domicile in North Carolina for at least 12 months immediately prior to his/her classification as a resident for tuition purposes. In order to be eligible for such classification, the individual must establish that his or her presence in the State during such twelve-month period was for purposes of maintaining a bona fide domicile rather than for purposes of mere temporary residence incident to enrollment in an institution of higher education.

2. Domicile. Domicile means one's permanent dwelling place of indefinite duration, as distinguished from a temporary place of abode.

3. Burden of proof and statutory presumptions. The burden of establishing facts which justify classification of a student as a resident entitled to in-state tuition rates is on the applicant for such classification. Proof of residential status is controlled, initially, by two statutorily prescribed complementary presumptions, which are stated in terms of prima facie evidence:

a. If the parents or court-appointed legal guardian of the student (without reference to the question of whether the student is a minor or an adult) are not domiciliaries (legal residents) of North Carolina, such fact shall constitute prima facie evidence that the student is not a domiciliary (legal resident) of North Carolina, and the student must assume the burden of rebutting the prima facie showing by producing evidence the he or she independently is, in fact, a domiciliary (legal resident) of North Carolina, in spite of the nonresidential status of his or her parents:
b. Conversely, if the parents of the student are domiciliaries of North Carolina, such fact shall constitute prima facie evidence that the student is a domiciliary of North Carolina. If the student has neither parents nor legal guardians, the prescribed concept of prima facie evidence cannot and does not apply.

Statutory Exceptions

a. *Grace Period.* By virture of the provisions of G. S. 116-143.l, if a student has been properly classified as a resident for tuition purposes, a change in that student's state of residence thereafter does not effect in all cases an immediate automatic loss of entitlement to the in-state tuition rate. To qualify for the grace period, the following conditions must be satisfied:

1. The student must have been properly classified as resident for tuition purposes, on the basis of a valid finding that the student in fact was a legal resident of North Carolina and had been such for the requisite twelve-month period prior to classification.

2. At the time of subsequent change of legal residence to a state other than North Carolina, the student must have been enrolled in a public institution of higher education in North Carolina.

The extent of this grace period, during which the in-state rate is applicable in spite of the fact the student is not a legal resident of North Carolina, is twelve months from the date of change in legal residence, plus any portion of a semester or academic term remaining, as of the expiration date of the twelve-month period, in which the student is enrolled.

b. *Qualifying Periods for Spouses.* By virtue of the provisions of G. S. 116-143.1, the prescribed twelve-month period of legal residence required for entitlement to classification as a resident for tuition purposes may be shortened on the basis of the marital status of the student, in specified circumstances. If a student otherwise can demonstrate compliance with the fundamental statutory requirement that he or she be a legal resident of North Carolina, the second statutory requirement relating to duration of residence may be satisfied derivatively, in less than twelve months, by reference to the length of the legal residence of the spouse of the student, if the spouse has been a legal resident of the State for the requisite twelve-month period.

4. Married Persons. The domicile of a married person, irrespective of sex, is determined by reference to all relevant evidence of domiciliary intent. No person shall be precluded, solely by reason of marriage to a person domiciled outside of North Carolina, from establishing or maintaining legal residence in North Carolina. No person shall be deemed, solely by reason of marriage to a person domiciled in North Carolina, a resident of North Carolina. The fact of marriage and the place of the domicile of his or her spouse shall be deemed relevant evidence to be considered in ascertaining domiciliary intent.

5. Minors. A minor is any person who has not reached the age of eighteen years. The domicile of a minor is that of the father. With a few exceptions noted below, this presumption is virtually irrebutable. If the father is deceased, the domicile of the minor is that of the surviving mother. If the parents are divorced or legally separated, the domicile of the minor is that of the parent having custody by virtue of a court order; or, if no custody has been granted by virtue of court

order; or, the domicile of the minor is that of the parent with whom he or she lives; or, if the minor lives with neither parent, in the absence of a custody award, the domicile of the minor is presumed to remain that of the father. Even though a person is a minor, under certain circumstances the person may be treated by the law as being sufficiently independent from his/her parents as to enjoy a species of adulthood for legal purposes. The consequences, for present purposes, of such circumstances is that the affected person is presumed to be capable of establishing a domicile independent of that of the parents; it remains for that person to demonstrate that a separate domicile in fact has been established. The circumstances recognized as having the potential emancipating effect are:

a. Marriage of the minor person;
b. Parental disclaimer of entitlement to the minor's earnings and the minor's proclamation and actual experience of financial independence from his/her parents, with the actual establishment and maintenance of a separate and independent place of residence.

6. Aliens. An alien holding a visa which will permit eventual permanent residence in the United States is subject to the same considerations as a citizen. An alien holding a visa which will not permit eventual permanent residence in the United States (for example, a student visa) cannot be classified as a resident.

7. Military Personnel. A member of the "armed services" who is living in and performing from a duty station in North Carolina incident to active military duty can qualify as a North Carolina resident for tuition purposes. Dependent relatives who share the service member's abode may also qualify. No person shall lose his or her in-state residence status by serving in the armed forces outside of the State of North Carolina.

8. Property and Taxes. Ownership of property in or payment of taxes to the State of North Carolina apart from legal residence will not qualify one for the in-state tuition rate.

9. Change of Status. A student admitted to initial enrollment in an institution (or permitted to re-enroll following an absence from the institutional program which involved a formal withdrawal from enrollment) shall be classified by the admitting institution either as a resident or as a non-resident for tuition purposes prior to actual matriculation. A residential classification once assigned (and confirmed pursuant to any appellate process invoked) may be changed thereafter (with a corresponding change in billing rates) only at intervals corresponding with the established primary divisions of the academic calendar.

10. Transfer Students. When a student transfers from one North Carolina Public Institution of higher education to another, he or she is treated as a new student by the institution to which he or she is transferring and must be assigned an initial residential classification for tuition purposes.

The transfer into or admission to a different component of the same institution (e. g., from an undergraduate to a graduate or professional program) is not construed as a transfer from one institution to another and thus, does not by itself require a reclassification inquiry unless (1) the affected student requests a reclassification inquiry or (2) the transfer or enrollment occurs following the lapse of more than one quarter, semester, or term during which the individual was not enrolled as a student.

11. Responsibility of Students. Any student or prospective student in doubt concerning his or her residence status must bear the responsibility for securing a ruling by stating his or her case in writing to the admissions office. The student who, due to subsequent events, becomes eligible for a change in classification, whether from out-of-state to in-state or the reverse, has the responsibility of immediately informing the Office of Admissions of this circumstance in writing. Failure to give complete and correct information regarding residence constitutes grounds for disciplinary action.

12. Appeals of Rulings of Classification Committee. A student appeal of a classification decision made by the Classification Committee shall be filed by the student with that group in writing within 10 calendar days from the receipt of such notification and shall be transmitted to the Residence Status Committee by an officer, who shall not vote in that Committee on the disposition of such appeal. The student shall be notified of the date set for consideration of the appeal and, on request of the student, he or she shall be afforded an opportunity to appear and be heard by the Committee. Any student desiring to appeal a decision of the Residence Status Committee shall give notice in writing of that fact within 10 calendar days of receipt by the student of the decision of the Residence Committee, and the basis for such appeal, to the Chairman of the Residence Status Committee, and the Chairman shall promptly transmit the appeal to the State Residence Committee.

Regulations concerning the classification of students by residence for purposes of applicable tuition differentials, are set forth in detail in **A Manual To Assist The Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes.** Each enrolled student is responsible for knowing the contents of this **Manual,** which is the controlling administrative

statement of policy on this subject. Copies of the Manual are available on request in the Admissions Office.

ADMISSION OF TRANSFER STUDENTS—The Admissions Counselor and Subject Instructor will review applications for admissions with advanced standing. Where subject content and length of course are comparable with those in the curriculum applied for, credit may be allowed for grades of "C" or above. Transfer credit will not influence the students grade point average while at Cape Fear Technical Institute. In certain cases where the school and the student believe an alternate course will be more beneficial to the student, such alternate course may be allowed.

ADMISSION OF SPECIAL STUDENTS—Students entering a diploma or degree program will be allowed to take up to 27 quarter hours credit before submitting all admissions requirements.

ADMISSION OF FORMER STUDENTS—All former students who left the school in good standing are encouraged to enroll for additional study at the Institute.

ADMISSION OF NON-IMMIGRANT ALIEN STUDENTS—"This school is authorized under Federal law to enroll non-immigrant alien students."

TRANSFER WITHIN THE INSTITUTE—Students that desire to change from one program to another may have their records reviewed for possible transfer of credit. In cases where grades are acceptable, and prior course work is applicable to the new curriculum, transfer may be allowed.

PROFICIENCY EXAMINATION—Credit by proficiency examination may be given for a course. Eligibility to take a proficiency examination may be based on high achievement in secondary schools, post secondary schools, or experience. Arrangements for examination should be made with the major subject instructor, Division Chairman and Dean of Student Affairs.

FRESHMAN ORIENTATION—Freshman Orientation is provided for full time students entering CFTI for the first time. Orientation informs the student about the academic and social policies of the Institute, and acquaints him or her with the library and other facilities. Upperclassmen assist in orientation and help answer questions about the Institute's policies and procedures.

REGISTRATION—Students who have been admitted, and who have paid their tuition deposit (see page 00 for information on this deposit) will register on the dates set by the school for this purpose. Students

will obtain their class schedules and pay their fees at that time. Late registrants are charged a $5.00 late registration fee.

COURSE LOAD—A student who carries a minimum of 12 quarter hours is considered a full time student. The normal load is 14-18 quarter hours. A student may carry a maximum of 24 quarter hours credit. Any exception to this rule must be approved by the Dean of Student Affairs.

AUDITING COURSES—Students who wish to audit courses must register for the audit by following the regular registration procedures. Auditing students receive no credit and are not required to participate in class discussion or take tests. The fees for audit courses are the same as those taken for credit.

DROP-ADD PERIOD—Students will be allowed to add courses up to 20% point of time of any particular class. Courses may be dropped at anytime.

HOW MUCH DOES IT COST?—All fees are established by the State Board of Community Colleges. Currently tuition is charged at the following rates for all curriculum courses:

North Carolina Students:
Full Time.....$ 51.00 per quarter
Part Time.....$4.25 per quarter hour credit

Out-of-State Students:
Full Time.....$255.00 per quarter
Part Time.....$21.25 per quarter hour credit

Books and small tools are purchased by students as they are needed. The Institute attempts to keep the cost of books and tools at a minimum. A $5.00 activity fee is charged at the beginning of each Fall, Winter and Spring quarter.

Degrees, diplomas, caps and gowns are ordered directly from a company representative during the spring and summer quarters of each year. The cost of these items is not included in the activity fee, but is paid directly by the student to the company representative at the time of order.

All students who work in laboratories or shops should purchase accident insurance; this insurance may be purchased annually or quarterly at the time of registration. All insurance expires on August 31 of each school year. Parking permits may be purchased for $6.00 at the time of the student's initial registration. Parking permits are valid through August of the current school year.

WHEN ARE PAYMENTS MADE?

When an applicant is officially admitted to a course of study, he or she is required to make a $15.00 tuition deposit. This deposit is nonrefundable except in cases where the school is unable to admit the person or unable to offer the course applied for.

All tuition and fee charges are due and payable on the day of registration. Any deferred payments or exceptions to rules on financial affairs must be approved by the Dean of Fiscal Affairs.

The accident insurance is purchased on registration day of the first quarter of attendance.

No student will be permitted to graduate, nor will a transcript be issued until all financial obligations to the school are satisfied.

REFUND

Tuition refund for students shall not be made unless the student is, in the judgment of the institution, compelled to withdraw for unavoidable reasons. In such cases, two-thirds (2/3) of the student's tuition may be refunded if the student withdraws within ten (10) calendar days after the first day of classes as published in the school calendar. Tuition refunds will not be considered after that time. (Tuition refunds will not be considered for tuitions of five dollars ($5.00) or less, except if a course or curriculum fails to materialize, all the student's tuition shall be refunded.)

Where a student, having paid the required tuition and fees for a quarter, withdraws from the institution before the end of the quarter and the reasons for the withdrawal are found excusable by the institution's administration, the student may be allowed credit for unrefunded tuition and fees if he or she applies for re-admission during any of the next four calendar quarters and petitions in writing to be allowed such credit.

STUDENT FINANCIAL AID

Limited financial aid is available through gifts or loan funds provided by individuals or civic groups. This program is administered through the services of a Financial Aid Director located in the Student Affairs Division.

It is required that each applicant for financial assistance complete and submit the Financial Aid Form (FAF) to the appropriate College Scholarship Service Office. The Financial Aid Form can be obtained by writing the Office of Financial Aid, Cape Fear Technical Institute.

It is also required that each aid applicant complete and submit the Institutional Application for financial aid to the Office of Financial Aid at Cape Fear Technical Institute.

Financial Aid Satisfactory Academic Progress Standards

Students enrolled in previous years must be making satisfactory progress according to this policy if they intend to apply for Financial Aid.

Financial Aid recipients are required to maintain satisfactory progress toward completing a degree, diploma, or certificate. The satisfactory progress will be measured at the end of each increment (year) as listed below. The maximum time frame allowed for program completion will be three (3) quarters in addition to what is outlined for each program listed in the catalog (failing, program change, part time, and withdrawal inclusive). If the curriculum attempted has not been completed within the allowable time, and satisfactory progress has not been made toward program completion, all financial aid will be terminated.

At the end of each year, the number of completed credit hours will be measured to ensure that satisfactory progress is being maintained toward program completion. For instance, at the end of the first year, if a student has not completed the number of credit hours outlined in this policy, then satisfactory progress is NOT being maintained. Completed credit hours will include: No credit, NC; Withdrew failing, WF; Incompletes changed to failing, F; Failing, F; and repeating courses.

STUDENTS WITH MITIGATING CIRCUMSTANCES ARE ENCOURAGED TO USE THE APPEAL PROCESS. The circumstances must be properly documented and will be evaluated by the Financial Aid Committee. This policy pertains only to financial aid recipients and is not applicable for the purpose of continued enrollment since such determinations are made according to other institutional policies.

PROBATIONARY PERIOD

Financial Aid recipients are required to maintain satisfactory academic progress in order to receive aid. These recipients will be allowed to receive financial aid for only one quarter after having been placed on academic probation. If students do not make satisfactory academic progress during this probational period, Financial Aid benefits will be terminated.

APPEAL PROCESS FOR FINANCIAL AID

1. The Financial Aid Director shall inform the student in writing of Financial Aid termination.
2. If the student desires to appeal the termination of Financial Aid, a written request must be submitted to the Financial Aid Director within five (5) school days of the date of the letter informing the student of the termination. The Director will then present the appeal to the Financial Aid Committee.

3. Should the Financial Aid Committee deny the student's appeal, the student may appeal to the Dean of Student Affairs.

The Financial Aid Programs are as follows:

GRANTS

Pell Grants (Title IV)—formerly known as BEOG

This award is granted through the Federal Government for students in need of financial assistance. It does not have to be repaid. Depending upon the need factor and cost of education, Pell Grant awards range from $200 to $2100 yearly. You must apply each year.

Supplemental Educational Opportunity Grants (Title IV)—SEOG

The SEOG is awarded by the Institute to students who have demonstrated financial need. It does not have to be repaid. The grant ranges from a minimum of $200 to a maximum of $2000 yearly, depending upon need and availability of funds. In order to be considered, a Financial Aid form must be submitted to College Scholarship Service for needs analysis. An institutional application for aid must also be filed in the Financial Aid Office.

North Carolina Student Incentive Grant Program—NCSIG

Funds are provided by the North Carolina Education Assistance Authority to help needy students obtain their educational goal. Eligibility requirements are as follows: (1) must be a legal resident of North Carolina (2) demonstrate substantial financial need (3) enrolled as a full time student, and (4) maintain satisfactory progress.

SCHOLARSHIPS

Wachovia Bank and Trust Company Scholarship

This scholarship is given by Wachovia Bank and Trust Company. The scholarship is to be used for paying required tuition, books, and transportation costs. The total amount of the scholarship is $500, and payment of the scholarship will be made to the recipient in three payments. This scholarship must be awarded to a full time, second year student in a two-year technical curriculum.

Eligibility for this scholarship is based on the following criteria: (1) academic performances during the first year of enrollment (2) demonstrated financial need.

North Carolina Community College Scholarship

The State Board of Community Colleges established a Community College Scholarship to make educational funds available to those persons who are hit hardest by the rising cost of education. The award is given in the amount of $100 per quarter to each student. Nine scholarships are assigned to this school.

To become a candidate for these scholarships, a person should meet this criteria: (1) be a North Carolina resident (2) be enrolled at least half-time (3) maintain a 2.00 grade point average, and (4) demonstrate financial need. Students must submit to College Scholarship Service (CSS) a complete financial aid form (FAF) for a needs analysis report.

N.C. Sheriffs' Association Undergraduate Criminal Justice Scholarship

The North Carolina Sheriffs' Association donated funds to the State Board of Community Colleges to establish scholarship programs for students enrolled in Criminal Justice, Juvenile Justice, Corrections Science or Police Science. The Scholarship is valued at $220 and will be disbursed quarterly.

The criteria for selection includes: (1) be a North Carolina resident (2) enrolled in a course of study leading to a technical degree or diploma in Criminal Justice, Corrections Science or Police Science (3) maintain a 2.00 grade point average, and (4) continue at the institution where the enrollment period began at the time of the scholarship award for the duration of the enrollment period began at the time of the scholarship award for the duration of the scholarship.

Electronics Technology Scholarship

Scholarship funds have been made available to assist students enrolled in the Electronics Technology program. The scholarship is worth $500 to be awarded in three quarterly payments. The money should be used for tuition, fees and books.

The criteria for selection includes: (1) the scholarship should be awarded to a minority student in the Electronics Technology program who graduated from a North Carolina high school, and (2) the Scholarship is based on proven academic ability and a need basis with the selection being made by a scholarship committee composed of at least two individuals.

Wilmington Woman's Club Scholarship

This scholarship has been given by the Wilmington, N. C. Woman's Club. The Woman's Club makes available scholarships in the amount of $300 per recipient for one academic year. The scholarship amount is awarded in quarterly payments of $100 each quarter. This scholarship is awarded to a needy student who is a resident of New Hanover County and enrolled in the Practical Nursing Curriculum. The recipient has to maintain satisfactory academic progress in order to continue receiving the scholarship.

Cape Fear Section of the Instrument Society of America Scholarship

These scholarship(s) are given by the Cape Fear Section of the Instrument Society of America. The total amount of the scholarship per recipient will be determined by the availability of scholarship

funds at the time the scholarships are awarded. The scholarship is to be used for paying required tuition, books and fees. The scholarship amount will be divided by the number of quarters the recipient will be in school during any one particular year. These scholarships must be awarded to those who are classified as full time second year Instrumentation students.

One scholarship each academic year will be awarded to the student with the highest grade point average at the completion of the first year of the Instrumentation Curriculum (only those students who have completed four academic quarters in Instrumentation I at Cape Fear Technical Institute will be considered for the academic scholarship). The academic scholarship will be used to meet educational costs during the second year of the Instrumentation Curriculum.

The Cape Fear Section of the Instrument Society of America will also award need based scholarships to be determined by the availability of scholarship funds at the time the scholarships are awarded.

The recipient of the academic scholarship and the need based scholarship(s) must be making academic satisfactory progress to be eligible.

LOANS

North Carolina Parent Loan for Undergraduate Students (Title IV)—PLUS

This Parent Loan Program is administered in North Carolina by the College Foundation, Inc., through the State Education Assistance Authority. Through this program, loans are made directly to parents of dependent undergraduate students. The borrower must be (1) U.S. citizen or eligible non-citizen (2) must be North Carolina legal resident. The student for whom the loan is requested must be (1) U.S. citizen or eligible non-citizen (2) North Carolina legal resident (3) must maintain satisfactory progress in chosen field of study (4) student cannot be in default on any loan program, or owe a refund on any educational grant program.

Parents can borrow up to $3,000 yearly for each dependent under graduate son/daughter. The interest rate is 12%. Repayment of the loan begins immediately from the date the loan is made.

In North Carolina, these loans are made through College Foundation, Inc., Raleigh, North Carolina, a non-profit agency serving participating lenders throughout North Carolina. Information and applications for the North Carolina Insured Loan Program are available from the Foundation, 1307 Glenwood Avenue, Raleigh, NC 27605. Information about loans in other states is available from lenders, state agencies, or the Financial Aid Office upon request.

College Foundation, Inc. Loan (Title IV)

The insured loan program is administered in North Carolina by the College Foundation, Inc., through the State Educational Assistance Authority. Participating North Carolina banks and life insurance companies provide for the student loans and these are available to any North Carolina student under terms and conditions set by College Foundation. Loans cover educational expenses for one year including tuition, books and activity fee plus any allowances for travel and living expenses.

Owen S. Eckhardt Faculty Loan Fund

The Owen S. Eckhardt Faculty Loan Fund was established by the Cape Fear Technical Institute Faculty Association with a gift of $120. The loan is administered by the Financial Aid Office and made available to second-year students according to the following criteria: (1) financial need, (2) academic standing.

Owen Sullivan Eckhardt Memorial Loan Fund

This loan has been established in memory of Owen Sullivan Eckhardt, a former instructor at Cape Fear Technical Institute. The loan is in the amount of $150. This loan is to be awarded to a full time second-year student in the Chemical Laboratory Technology program. (In the event that there is not an eligible second-year student in the program, a full time second-year student in any other technical curriculum may be awarded this loan). This student must be classified as a North Carolina resident. The criteria for the selection of the loan recipient are: (1) financial need, (2) academic standing (GPA of at least 1.50).

Roger A. Greenleaf, Jr. Memorial Loan Fund

This loan fund has been established through Mr. Roger A. Greenleaf, Sr., a former staff member at Cape Fear Technical Institute. The loan is in the amount of $250. This loan is to be awarded to a full time second-year student in a technical curriculum. This student must be classified as a North Carolina resident. The criteria for selection of the loan recipient are: (1) financial need, (2) academic standing.

Lisa Gail Otis Memorial Loan Fund

This loan fund has been established in memory of Lisa Gail Otis, a former student at Cape Fear Technical Institute. The loan can be made in an amount up to $500. This loan is to be awarded to full time students in technical or vocational programs. The recipients of the loan must be classified as North Carolina residents. The criteria for selection are: (1) financial need, (2) academic standing.

CFTI Drafting and Design Loan Fund

The Drafting and Design department has established a loan fund in the amount of $100 per quarter. Students who receive this award must repay the loan within six months after graduation. There will be no interest charged on the loan. The criteria for selecting the recipient includes: (1) must be recommended by the Drafting department, (2) be a full time, second-year student, and (3) be making satisfactory progress. Students must secure applications for the loan from the Financial Aid Office.

EMPLOYMENT

College Work Study (Title IV)

The Institute participates in the College Work Study Program, which provides the students an opportunity to earn a portion of their college expenses by working while in school during the regular academic year. Those interested in this program should contact the Financial Aid Office located in the Division of Student Affairs.

OTHER FINANCIAL ASSISTANCE

Scholarships for Children of N.C. War Veterans

The Division of Veterans Affairs of the North Carolina Department of Administration administers a program of scholarships for children of certain categories of deceased, disabled, or POW/MIA veterans from North Carolina. These scholarships, when used at a public institution of higher learning, range from free tuition and exemption from certain mandatory fees to a reasonable room and board allowance, depending on the class of scholarship awarded. The scholarships are not to extend for a period longer than four academic years, which years, however need not be consecutive or used at the same school.

Any prospective students who think they may be eligible can obtain further information by contacting the State of North Carolina Veterans Service District Office located in the First Union National Bank Building on Front Street in Wilmington.

Veterans Educational Benefits

This program assists veterans as well as widows and/or children of eligible deceased or disabled veterans.

For detailed information about the Veterans Educational Benefits, contact the campus Veterans Affairs Office in S202, South Wing Building, or the nearest Veterans Administration field office in the First Union Building.

Vocational Rehabilitation

Vocational Rehabilitation is a program operated through the Division of Vocational Rehabilitation in cooperation with the North Carolina Department of Administration. The Division finances such services as are necessary to enable a physically or mentally employment-handicapped person to become self supporting. Financial assistance is available for training at Cape Fear Technical Institute for eligible handicapped persons. If a prospective student has a physical disability or is limited in his/her activity because of a disability, he/she should contact the nearest Division of Vocational Rehabilitation Office. The Division Office for Southeastern North Carolina is located on 709 Market Street, Wilmington, NC.

"G.I. Bill" Educational Benefits

The educational benefits available under the G.I. Bill are administered by the Veterans Administration which also is the final authority for determining eligibility. These benefits are not only available to eligible veterans, but also the spouses and children of certain categories of living and deceased veterans, and to certain active duty military personnel, reservists and National Guardsmen.

The length of time benefits may be paid and the amount payable is determined by the Veterans Administration based on several factors pertaining to each eligible person and the type of educational program entered.

Veterans and other prospective students eligible for G.I. Bill benefits are admitted to Cape Fear Technical Institute under the same admission requirements and attend school under the same school policies and regulations as other students. However, the Veterans Administration may impose additional requirements from time to time on the school and/or the students attending under the G.I. Bill which could result in the termination of benefits if not met.

Prospective students who believe they may be eligible for G.I. Bill benefits can obtain full details on the G.I. Bill, assistance in determining eligibility and assistance in the initiation of benefits from any of the following:

1. Veterans Administration Regional Office
   251 North Main Street
   Winston-Salem, North Carolina 27102
2. State of North Carolina
   District Veterans Service Office
   Post Office Box 1742
   First Union National Bank Building
   Wilmington, North Carolina 28401
3. Pender County Veterans Service Office
   County Administration Building
   Burgaw, North Carolina 28425

4. Brunswick County Veterans Service Office
   Brunswick County Governmental Center
   Bolivia, North Carolina 28422
5. Veterans Affairs Office
   Room S-202
   Cape Fear Technical Institute
   411 North Front Street
   Wilmington, North Carolina 28401

FEDERAL PROGRAMS

The Technical Institute cooperates with various federal agencies which provide financial assistance to occupational education trainees. Full infomation about such programs, when they are available, may be obtained from the Student Affairs section of the Institute.

THE LIBRARY

The Cape Fear Technical Institute Library is located on the sixth floor of the M.J. McLeod Building. With over 600 subscriptions to magazines and newspapers related to the various courses of study, the Library currently has some 26,000 books in the open-stack collection. Other materials available for patron use include 8,000 rolls of microfilms of back issues of magazines and genealogical materials; approximately 2,000 out-of-print books in microfiche format; and several hundred maps and charts frequently utilized in the instructional programs. A collection of phonograph recordings is available for patron listening. The North Carolina Employment Security Commission Job Placement Service listing of current jobs in North Carolina is received by the library and is available for patron use in the microfiche section. In addition, the Library houses a collection of sculpture and replicas of famous documents and works of art. Interlibrary loan service is available for all patrons. Typewriters, calculators, photocopy facilities, microfiche reader/printer are available for patron use.

Persons using the various materials collections are expected to return borrowed items promptly, pay the late return fines—if applicable—and to assume responsibility for replacing any lost or damaged materials. Library staff members will help patrons in every way possible—with all circulation of materials, reference and reserve materials, college catalogs, career materials/information, interlibrary loan materials, recreational reading/listening (viewing), and copying service.

The Cape Fear Technical Institute Library is a "Living Museum" of the history of the greater Wilmington, North Carolina area for the

time period between 1750 and 1820. From time to time, traveling exhibits of art and handicraft, Cape Fear Technical Institute students workmanship, as well as works of art by area residents are placed on display.

Karl Nyren, Senior Editor of **Library Journal** of the American Library Association, honored the Cape Fear Technical Institute Library by selecting it as one of the sixteen outstanding academic libraries throughout the world, constructed during 1976 and 1977, and included it in his book: **Special Report #16, Academic Libraries,** published by Xerox Corporation, New York, summer, 1980.

While the activities and materials collections of the Library, for the most part, are related to the programs of instruction offered by Cape Fear Technical Institute and exist primarily for the students, faculty, and staff of the Institute, all adult residents of the area served by Cape Fear Technical Institute, and particularly industrial employees have a cordial welcome to the Library.

THE AUDIO—VISUAL SERVICE DEPARTMENT

The Cape Fear Technical Institute Audio—Visual Service Department is located on the fifth floor, Room S-513 of the M. J. McLeod Educational Building. Currently there are available over 2,154 software materials in various media formats related to the various courses of study. These include 35 mm slides, overhead transparencies, 8 mm single concept film loops, Labelle cartridges, 16 mm sound motion pictures, 3/4 inch video tape recordings, 1/2 inch VHS tape recordings and audio tape recordings. There is also an assortment of A.V. catalogs such as The Division of the State Library/Department of Cultural Resources, Audio—Visual Catalog 1985 Part I & II, Educators Guide to Free Films, Filmstrips, Video Materials, Educators Guide to Free Computer Software Catalog and the North Carolina Department of Justice/Criminal Justice AV Catalog. The A.V. Department has available the Nicem. index to 35 mm filmstrips, video tapes, 16 mm educational films, and producers and distributors.

The Cape Fear Technical Institute Audio—Visual Service Department's major purpose is to support the educational efforts of the institute. The department will provide technical assistance in the design of Audio—Visual programs to meet your specific requirements.

COUNSELING SERVICES

Qualified counselors are available to assist students in selecting an appropriate course of study, to provide occupational and educational information and to discuss scholastic or personal problems which may arise.

GRADE POINT AVERAGES AND GRADING

Letter grades are used at Cape Fear Technical Institute in reporting grades to students; however, such terms as 3.20, 2.60, and 1.89 will be used. These are called "grade point averages," and are very important. They are earned on the following basis: (All hours attempted are computed in the GPA)

GRADE	NUMERICAL EQUIVALENCY	SIGNIFICANCE	QUALITY POINTS PER QUARTER HOUR
A	94-100	Superior	4
B	86-93	Good	3
C	78-85	Average	2
D	70-77	Poor	1
F	Below 70	Failure	0
I	Incomplete	Incomplete	0
AU		Audit	0
W		Withdrawal	0
WP		Withdrawal Passing	0
WF		Withdrawal Failing	0
NC		No Credit	0

Incomplete Grades

Incomplete will be given only when circumstances justify additional time to complete the course. An incomplete must be removed within six weeks following the first day of the next quarter it was received. Grades not made up within six weeks will be recorded as an "F."

Report cards are mailed to the student shortly after the end of each quarter.

What is a "Quarter Hour Credit?"

Each course listed is followed by a notation on the number of quarter hours it carries. Normally, the number of quarter hours earned is based on the number of class, laboratory or shop hours spent under the supervisor or the course instructor per week for the quarter. Usually I quarter hour credit is given for each hour of class per week, for each two hours of laboratory work per week, or for each three hours of shop or manipulative laboratory per week. (A class

hour requires a minimum of 50 minutes of instruction.) Classroom portions require outside preparation, normally 2 hours per each hour of instruction. Exceptions to this arrangement may be made in cases where specific classification is not feasible.

How are Grade-Point Averages Computed?

For example, suppose grades for the Quarter are:

SUBJECT	GRADE	QTR.HRS. CREDIT
T ENG 102	94 or A	3
T MAT 110	87 or B	5
T BUS 120	76 or D	6
T ECO 104	83 or C	3
T BUS 115	78 or C	5
		22

The grade for each subject will be converted to a grade-point (see conversion in table below). Then the grade-point is multiplied by the quarter hours. The result (Total quality points) is then divided by the total quarter hours credit to give the grade-point average.

Example:

CLASS	GRADE POINT		QTR.HRS. CREDIT		QUALITY POINTS
T ENG 102	4	x	3	=	12
T MAT 110	3	x	5	=	15
T BUS 120	1	x	6	=	6
T ECO 104	2	x	3	=	6
T BUS 115	2	x	5	=	10
	TOTALS		22		49

Divide 49 by 22 = 2.23
The grade point average is 2.23

TRANSCRIPT OF RECORDS

Upon request of the student, transcripts of credit earned at Cape Fear Technical Institute only will be sent to other schools and/or industry. There is no charge for this service. Requests should be made to the Registrar's Office.

"Records of progress are kept by this institution on veteran and non-veteran students alike. Progress records are furnished the students, veterans and non-veterans alike, at the end of each scheduled school term."

REQUIREMENTS FOR GRADUATION

To receive the Associate in Applied Science Degree or a Diploma, a student must maintain satisfactory grades in all laboratory and class subjects and an overall grade point average of at least 2.00.

A student must be in residence during the last quarter to be eligible for graduation.

GRADUATION WITH HONORS

Those members of the graduating class who have demonstrated outstanding leadership, attitude and ability will be graduated with honors. Recipients of these awards are selected by Lead Instructors in cooperation with appropriate faculty members.

SCHOLASTIC HONORS

Full-time (12 or more quarter hours credit) students who have earned a grade point average of 3.00 with no grade lower than "C" will be placed on the Dean's List.

SEXUAL HARASSMENT

Discriminatory personal conduct including sexual harassment toward any member of the institution is a violation of both State and Federal law and Cape Fear Technical Institute policy and cannot be tolerated in the institutional community.

All members of this school community are expected and instructed to conduct themselves in such a way as to contribute to an atmosphere free of sexual harassment. Sexual harassment of any employee or student by any other employee or student is a violation of the policy of this school and will not be tolerated.

Requests for sexual favors and other unwelcomed verbal or physical conduct of a sexual nature by any employee or student constitutes sexual harassment when:

—submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, academic or student status, or
—submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting that individual, or
—such conduct has the purpose or effect of interfering with an individual's performance or creating an intimidating, hostile, or offensive environment in the work place or the class room.

Any student who believes that he or she has been subjected to sexual harassment in violation of this policy should make a confidential complaint to one of the Student Affairs counselors. If this is not feasible, the student may take the complaint to the Dean of Student Affairs.

GRIEVANCE PROCEDURE

If any student or prospective student feels that he or she has been discriminated against or denied service on the basis of race, color, national origin, religion, or sex, he or she should report such to the Vice President of the Institution, who is the Title IX Coordinator.

If any student or prospective student feels that he or she has been discriminated against or denied services on the basis of handicap, he or she should report such to the Dean of Curriculum, who is the Section 504 Coordinator.

CONDUCT

Students will have but one conduct rule, i. e., to conduct themselves as ladies and gentlemen. This has reference to dress, speech and action. Area of classroom rules will be designated by instructors or supervisors and must be followed by all.

DISRUPTIVE CONDUCT

The State of North Carolina has issued procedures to be followed in cases of disruptive conduct. Cape Fear Technical Institute, being a State Institute, will follow the procedures prescribed at all times.

WEAPONS ON CAMPUS

It shall be unlawful for any person to possess or carry, whether openly or concealed, any weapon on campus. The only exception made to this directive is in the case where training or job requirements of the student or employee requires that such be carried.

ATTENDANCE AND TARDINESS

The nature of the programs for students at Cape Fear Technical Institute is such that it is necessary that students be in regular attendance to obtain maximum benefit from their courses.

Students should aspire to a perfect attendance record at all times; however, emergencies do arise and such a record is difficult to maintain. Emergency absences are defined as:

(a) Illness or injury to the student
(b) Illness or death in the immediate family
(c) Inclement weather (hurricane, ice, etc.)

Standards of attendance must be established to provide student accountability required by various agencies associated with Cape Fear Technical Institute and to encourage student participation for the greatest possible benefit to the student. Accordingly, the following attendance policy has been established.

In addition to any other requirements, students must be in attendance at least 80% of the clock-hours of a course to receive credit. If credit is denied, the grade given will be an "NC" which will be computed in the student's grade point average as a failing grade.

Tardiness indicates, in most cases, lack of planning and adherence to a schedule. Since industry insists on these characteristics, students are encouraged to establish a record of promptness while at Cape Fear Technical Institute.

Special note to Marine Technology students: Students in the Marine Technology curriculum are at times involved in cruises on the ship that might take place during a holiday or quarter break during which time students are normally off. When such occurs, students must participate in the cruise.

DRESS

Where special dress or safety devices are required by the Institute, Department of Community College regulations, or public law, the student will be expected to conform. Students are expected to maintain good personal grooming consistent with the ordinary requirements of industry.

ACADEMIC REQUIREMENTS

Each student at Cape Fear Technical Institute is expected to make satisfactory progress toward obtaining a degree or diploma. At the end of each quarter, a student's grade point average for that quarter and his or her accumulative grade point average are examined. The minimum accumulative grade point average for remaining in good standing is as follows on the chart below.

Attempted Credit Hours	Diploma	Degree
1 - 23	1.25	1.25
24 - 40	1.40	1.40
41 - 59	1.70	1.55
60 - 80	2.00	1.75
81 - 100		1.90
101		2.00

PROBATION AND SUSPENSION

A student who falls below the accumulative grade point average requirements will be placed on probation for the following quarter. When a student is placed on probation, he or she is so notified in writing by the Admissions Office. A student on academic probation should schedule a conference with a counselor after he or she is so notified about his or her probationary status. Any student on probation who fails to make satisfactory improvement during the following quarter may be suspended or placed in a more appropriate program. A suspended student may be re-admitted after one quarter and take a class load to be determined in conference with a counselor. Subsequent suspensions could result in the student not being re-admitted again. Any student whose conduct becomes unsatisfactory, may be placed on probation—any misconduct after a person is placed on probation will result in prompt suspension.

Special note to veterans/eligible persons attending under the G. I. Bill

When a veteran/eligible person fails to meet the school's accumulative grade point average requirements at some point in time in their program, he or she will be allowed a probationary period of one quarter. If he or she has not improved the accumulative grade point average to meet the school's requirements at the end of the probationary period, he or she must be de-certified to the Veterans Administration for pay purposes. If a veteran/eligible person is re-entered as a student after unsatisfactory progress, he or she will be recertified to the veterans Administration for pay purposes retroactively to the starting date of the quarter in which satisfactory progress is again established.

RIGHT OF APPEAL

Any student who is dismissed from school for academic or disciplinary reasons may have his or her case reviewed by requesting such through the Dean of Student Affairs, who, in turn, will bring his or her case before the Admissions and Student Affairs Advisory Committee. The appeal may be carried to the Board of Trustees at the student's request.

WITHDRAWAL

Students desiring to withdraw from school should contact the Admissions Office to obtain the necessary forms and procedures for official withdrawal. A student who fails to withdraw officially will receive a grade of "NC."

Students who withdraw from a course(s) within 21 calendar days from the date classes begin will receive a grade of "W" which will not be computed in the Grade Point Average (GPA). The only exception to this policy are courses that do not start at the beginning of the quarter. Students who withdraw from a course(s) after this period must receive a grade of "WP" or "WF." WP's will not be computed in the GPA whereas WF's will be computed as a failing grade.

In cases where former students desire to re-enter the school they must contact the Admissions Office, which will review their records.

CAREER PLANNING AND PLACEMENT

Career Planning and Placement services are considered an integral part of student services at Cape Fear Technical Institute. An important objective of this office is to counsel prospective and currently enrolled students with regard to planning a career. Some of the career counseling services made available through this office are: special help in the development of job search techniques, information as to present and future employment trends, business/industry literature and directories, and the administration and interpretation of vocational interest inventories.

Another vital role with the help and support of faculty and staff is to assist students and graduates in securing job positions in their chosen fields. Frequent contact is made with local businesses and industries. Also, throughout the year this office coordinates on-campus company recruitment of students and Cape Fear Technical Institute alumni.

STUDENT ACTIVITIES

Extra-curricular activities are a very important part of the total educational program at Cape Fear Technical Institute.

Among the intercollegiate activities offered are basketball, softball, golf and tennis.

Intramural activities offered by the school include volleyball, touch football, chess, and table tennis.

The student government is a very active organization at this school. It is the voice of the student body and has paved the way for good lines of communication between the students and the administration.

The student newspaper, student handbook, and school annual are among the publications done by the students. Students interested in any aspect of such publications are encouraged to participate.

Many students attending Cape Fear Technical Institute donate their time and energies to Institute projects under the guidance of instructors and community leaders by participating in some type of service club. Service clubs available to students are: Chess Club, Dive Club, Future Secretaries Club, Paralegal Club, and Veterans Club. Monies received from the Student Activities fee help support the activities offered by the Institute.

Cape Fear Technical Institute is a member of the Eastern Carolina Community College Athletic Conference which includes nine other community colleges and technical institutes. There is a regular season conference champion and a tournament held at the end of each season for each inter-collegiate sport. Procedures for establishing clubs may be found in the student handbook.

HEALTH SERVICES

Health Services provided at this school are: (1) First aid and emergency care is available on campus. (2) Individual health counseling is made available. (3) Referrals for illness and injury that cannot be taken care of by individuals concerned are made to community health facilities. In case of illness or injury requiring transportation, the Student Affairs Office should be contacted immediately.

VETERANS SERVICES

This Institute has reaffirmed its commitment to Veterans by the establishment of a full time Veterans Affairs Office. The Veterans Affairs Office is staffed to provide services at times and places convenient to the veterans being served. Veterans attending this school are encouraged to use the services provided by this office.

ALUMNI

The Alumni Association was organized in order to strengthen old and create new bonds of friendship and to promote interest and support for the continued growth of the Institute. Membership is open to anyone who has attended Cape Fear Technical Institute and has completed one full quarter of curriculum study. Associate memberships are available to those who have participated in a program of continuing education and to those who have not attended, but share a sincere interest in the future of Cape Fear

Technical Institute. Efforts are made through public news media to inform all members of current Alumni activities, including business meetings, fund-raising, and social events.

TECHNICAL CURRICULA

TECHNICAL PROGRAMS

Technicians are among the fastest growing occupational groups in the United States. In recent years, the needs of an expanding and increasingly technical economy have greatly intensified the demand not only for engineers and scientists, but also for the technical workers who assist them. Technicians are those workers whose jobs require both knowledge and use of scientific and mathematical theory; specialized education or training in some aspect of technology or science; and who, as a rule, work directly with scientists and engineers. Some jobs held by these technicians are supervisory and require both technical knowledge and the ability to supervise people.

In carrying out their assignment, engineering and science technicians frequently use complex electronic and mechanical instruments, experimental laboratory apparatus, and drafting instruments. These workers engage in virtually every aspect of engineering and scientific work. In research, development, and design work they conduct experiments or tests; set up, calibrate, and operate instruments; and make calculations. They also assist scientists and engineers in developing experimental equipment and models by making drawings and sketches and frequently do some design work.

Technicians also work in jobs related to production. They may aid in the various phases of production operations, such as working out specifications for materials and methods of manufacturing, devising tests to insure quality control of products, or making time-and-motion studies (timing and analyzing the worker's movements) designed to improve the efficiency of a particular operation. They may also perform liaison work between engineering and production or other departments.

Cape Fear Technical Institute provides training in a number of areas which require training beyond the high school, but do not require four years of college preparation. Most of the technical programs are six quarters in length and are geared to train a person in specific technical areas. Students spend twenty to thirty hours per week in classroom and laboratory work; additional time will be needed for outside assignments.

Credit hours granted in the various technical programs are not transferable to other institutions except as an institution may determine that a particular course and credits are applicable to a curriculum offered by that school.

The Associate in Applied Science degree is awarded to students who complete a technical program. To be eligible for the degree, a student must maintain satisfactory grades in all laboratory and class subjects and an overall grade point average of 2.00.

AUTHORIZED PROGRAMS

Basic Law Enforcement Training (Certificate Program)
Business Administration
Chemical Technology
Computer Engineering Technology
Criminal Justice—Protective Services Technology
Electronics Engineering Technology
General Occupational Technology
General Office
Instrumentation Technology
Mechanical Drafting and Design Technology
Paralegal Technology
Secretarial—Engineering and Technical

ADMISSION REQUIREMENTS

The applicant must meet the following requirements:

1. be at least eighteen years of age, or his/her high school class must have graduated.
2. be a high school graduate or equivalent.*
3. demonstrate aptitude for technician training as determined by standard tests. These tests will aid in student selection, placement, and guidance. Guidance and counseling will be available to the student throughout his or her education, not just at the time of his or her enrollment.
4. complete medical form as required by the school for specific courses of study only after being accepted.
5. come in for a personal interview when required.

Certain curricula may have special requirements in addition to the above stated criteria.

ADMISSION PROCEDURE

The applicant must complete the following procedures:

1. submit completed application.
2. have transcripts of all previous education mailed to the Institute.
3. take placement test.
4. come to the school for a personal interview and do additional testing when asked to do so.
5. submit medical form as required by the school for specific courses of study—only after being accepted.

*See page 178 in General Adult Education Section of this catalogue for details about the high school equivalency certificate.

BASIC LAW ENFORCEMENT TRAINING

The Basic Law Enforcement Training curriculum certificate program prepares individuals to take the Basic Training—Law Enforcement Officers certification examination mandated by the North Carolina Criminal Justice Education and Training Standards Commission and/or it prepares individuals to take the Justice Officers Basic Training certification examination mandated by the North Carolina Sheriffs' Education and Training Standards Commission. Successful completion of this curriculum certificate program requires that the student satisfy the minimum requirements for certification by the Criminal Justice Commission and the Sheriffs' Commission. The student satisfactorily completing this program should possess at least the minimum degree of general attributes, knowledge and skills to function as an inexperienced law enforcement officer.

Job opportunities are available with state, county, and municipal governments in North Carolina. In addition, knowledge, skills and abilities acquired in this course of study qualifies one for job opportunities with private enterprises in such areas as industrial, retail, and private security.

To be eligible to take this course you must be twenty (20) years of age if you are considering employment with a Police Department and twenty-one (21) years of age with the Sheriffs Department. Also, you will need a letter of sponsorship either from a Police or Sheriffs Department.

BASIC LAW ENFORCEMENT TRAINING
(Certificate Program)

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
CJC	214	Pre-Service Law Enforcement Training (Clock Hours 121)	3	0	6	5
CJC	215	Law Enforcement Probationary Training (Clock Hours 264)	12	6	3	16
CJC	216	Police Officer Training (Clock Hours 22)	0	2	0	1
CJC	217	Deputy Sheriff Training (Clock Hours 33)	1	2	0	2
			16	10	9	24

See pages 78 to 120 for course descriptions.

BUSINESS ADMINISTRATION

The Business Administration curriculum is designed to prepare an individual for entry into middle-management occupations in various businesses and industries. The curriculum provides an overview of the business and industrial world—its organization and management.

The purpose of the curriculum will be fulfilled through courses designed to develop competency in: (1) understanding the principles of organization and management in business operations, (2) utilizing modern techniques to make decisions, (3) understanding the economy through study and analysis of the role of production and marketing, (4) communicating orally and in writing, and (5) interpersonal relationships.

Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in middle-management activities in business and industry.

BUSINESS ADMINISTRATION

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
BUS	102	Typewriting I	2	0	3	3
BUS	115-C	Business Law I	5	0	0	5
ENG	101-C	Grammar and Composition	3	2	0	4
MAT	110	Business Mathematics	5	0	0	5
PSY	217	Introduction to Psychology	3	0	0	3
			18	2	3	20
SECOND QUARTER						
BUS	103	Typewriting II	2	0	3	3
BUS	120	Accounting I	5	2	0	6
ENG	102-C	Grammar and Composition	3	2	0	4
MAT	130	Advanced Business Mathematics	5	0	0	5
SOC	102-C	Principles of Sociology	3	0	0	3
			18	4	3	21
THIRD QUARTER						
BUS	104	Typewriting III	2	0	3	3
BUS	121	Accounting II	5	2	0	6
EDP	104-C	Data Processing Theory	3	0	0	3
ENG	104	Reading and Composition	3	0	0	3
ENG	204	Oral Communication	3	0	0	3
			16	2	3	18
FOURTH QUARTER						
BUS	122	Accounting III	5	2	0	6
BUS	128	Computerized Accounting — Electronic Spreadsheet	1	2	0	2
BUS	229	Taxes I	3	2	0	4
ECO	102	Economics I	3	0	0	3
EDP	250	BASIC Business Programming	2	2	0	3
			14	8	0	18
FIFTH QUARTER						
BUS	123-C	Business Finance I	3	2	0	4
BUS	222	Word Processing	2	0	3	3
BUS	230	Taxes II	3	2	0	4
BUS	239	Marketing	5	0	0	5
ECO	104	Economics II	3	0	0	3
ENG	206	Business Communications	3	0	0	3
			19	4	3	22
SIXTH QUARTER						
BUS	124-C	Business Finance II	3	2	0	4
BUS	125	Accounting IV	5	2	0	6
BUS	232-C	Sales Development	3	0	0	3
BUS	235-C	Business Management	3	2	0	4
SOC	206-C	American Institutions	3	0	0	3
			17	6	8	20

See pages 78 to 120 for course descriptions.

CHEMICAL TECHNOLOGY

The Chemical Laboratory Technology curriculum prepares individuals as research assistants to chemists in the laboratory or as planning and production assistants to chemical engineers in actual industrial production.

Chemical technicians perform quantitative and qualitative chemical analyses of processes involved in research, production or monitoring situations. They test samples of raw materials to determine that they are within specified limits required, analyze samples of finished products to determine quality, prepare laboratory test reports, check chemical analyses with specifications, and operate electronic laboratory equipment.

CHEMICAL TECHNOLOGY

			HOURS PER WEEK Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
CHM	114	Basic Chemical Concepts I	5	0	6	7
ENG	101	Grammar	3	0	0	3
HED	120	First Aid	2	0	0	2
MAT	121	Technical Mathematics	5	0	0	5
MAT	131	Applied Math for Chemistry I	2	2	0	3
PSY	217	Introduction to Psychology	3	0	0	3
			20	2	6	23
SECOND QUARTER						
CHM	115	Basic Chemical Concepts II	5	0	6	7
ENG	102	Composition	3	0	0	3
MAT	122	Technical Mathematics	5	0	0	5
MAT	132	Applied Math for Chemistry II	2	2	0	3
SOC	102-C	Principles of Sociology	3	0	0	3
			18	2	6	21
THIRD QUARTER						
CHM	116	Descriptive Chemistry	3	0	6	5
CHM	230	Organic Chemistry I	3	0	0	3
EDP	201	BASIC Language Programming I	2	0	3	3
ENG	103	Report Writing	3	0	0	3
PHY	100	Introductory Physics	4	2	0	5
SOC	206-C	American Institutions	3	0	0	3
			18	2	9	22
FOURTH QUARTER						
CHM	117-C	Unit Processes	1	0	18	7
CHM	150	Industrial Operations	5	0	0	5
			6	0	18	12
FIFTH QUARTER						
CHM	231-C	Organic Chemistry II	3	0	6	5
CHM	243	Industrial Analysis I (Qualitative)	1	0	9	4
ENG	204	Oral Communication	3	0	0	3
PHY	105	Physics: Heat and Fluids	3	2	0	4
			10	2	15	16
SIXTH QUARTER						
CHM	232-C	Organic Chemistry III	3	0	6	5
CHM	244	Industrial Analysis II (Quantitative)	1	0	9	4
FST	106-C	Nuclear Radiation Monitoring	3	0	0	3
PHY	103	Physics: Electricity	3	2	0	4
			10	2	15	16
SEVENTH QUARTER						
CHM	245	Industrial Analysis III (Quantitative)	3	0	9	6
MEC	107	Process Instrumentation	3	0	0	3
MEC	215	Metallurgy	3	2	0	4
MEC	235-C	Hydraulics and Pneumatics	3	0	3	4
			12	2	12	17

See pages 78 to 120 for course descriptions.

COMPUTER ENGINEERING TECHNOLOGY

This program is intended to provide the skills required to install, service and maintain computers, microprocessor and computer controlled equipment and computer peripheral devices. The curriculum provides training in both the hardware and software areas of the computer field.

A sequence of introductory courses provides the student with a strong background in physics, technical mathematics, electricity, electronics and digital logic circuits and concepts. Advanced course work provides a detailed study of: the logic of the central processing unit, the operation of integrated circuits in the central processing units, the operation and use of integrated circuit memory devices and the interfacing of the central processing unit to memory devices. Additional studies cover interfacing the central processing unit to external devices using both serial and parallel data transfer, the operation of large scale integrated programmable interface units and their interfacing with the central processing unit, and the operation of computer peripheral devices such as video displays, printers, floppy disk storage systems, magnetic type units, keyboards and the techniques of converting signals between the analog and digital forms.

The programming course work provides a sequence of study stressing good program design techniques and structured programming, and program documentation. Rather than being familiar with a large number of programming languages, the student is expected to learn well a highly structured language, such as PASCAL, and an Assembly Language. The importance of Assembly Language to the understanding of the operation of the central processing unit and the related computer units is stressed. Computer operating system concepts are discussed to provide an unified view of the hardware and software aspects of the computer system.

Prerequisites: In addition to general admissions requirements, at least one year of high school algebra or the equivalent is required.

COMPUTER ENGINEERING TECHNOLOGY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
ELC	107-F	Electricity I	4	0	6	6
ELN	101	Electronic Project	0	2	0	1
ELN	106	Electronics I	2	0	6	4
ENG	101	Grammar	3	0	0	3
MAT	121	Technical Mathematics	5	0	0	5
			14	2	12	19
SECOND QUARTER						
ELC	108-F	Electricity II	4	0	6	6
ELN	107	Electronics II	4	0	6	6
ENG	102	Composition	3	0	0	3
MAT	122	Technical Mathematics	5	0	0	5
			16	0	12	20
THIRD QUARTER						
ELC	109-F	Electricity III	4	0	6	6
ELN	108	Electronics III	4	0	6	6
MAT	123	Technical Mathematics	5	0	0	5
PHY	101	Physics: Properties of Matter	3	2	0	4
			16	2	12	21
FOURTH QUARTER						
DFT	101	Technical Drafting	1	0	3	2
ELN	109	Electronics IV	3	0	6	5
ELN	110	Introduction to Digital Electronics	3	0	6	5
ENG	103	Report Writing	3	0	0	3
PHY	102	Physics: Work, Energy, Power	3	2	0	4
			13	2	15	19
FIFTH QUARTER						
EDP	201	BASIC Language Programming I	2	0	3	3
ELN	240	Computer Project (Digital)	0	0	6	2
ELN	241	Digital Principles and Applications	2	0	3	3
ELN	243	Computer Electronics	0	0	6	2
ELN	250	Introduction to Microprocessors	0	0	3	1
PSY	217	Introduction to Psychology	3	0	0	3
			7	0	21	14
SIXTH QUARTER						
EDP	210	BASIC Language Programming II	2	0	3	3
ELN	244	Computer Project (Microprocessor)	1	0	3	2
ELN	245	Peripheral Devices	1	0	6	3
ELN	251	Microprocessors I	2	0	6	4
ENG	204	Oral Communication	3	0	0	3
SOC	102-C	Principles of Sociology	3	0	0	3
			12	0	18	18
SEVENTH QUARTER						
BUS	272	Principles of Supervision	3	0	0	3
ELN	247	Computer Project (Microcomputer)	0	0	3	1
ELN	249	Computer Interfacing	0	0	3	1
ELN	252	Microprocessors II	2	0	6	4
ELN	255	Computer Systems	3	0	3	4
			8	0	15	13

See pages 78 to 120 for course descriptions.

CRIMINAL JUSTICE—PROTECTIVE SERVICES TECHNOLOGY

The Criminal Justice Technology curriculum is designed so that it may be a multifaceted program of study. It may consist of study options in corrections, law enforcement and security services.

The curriculum is designed with a core of courses to afford one the opportunity to acquire basic knowledge, skills and attitudes in the generally accepted subject areas associated with a two-year study of correctional services, law enforcement services and security services. It includes subjects such as interpersonal communications, law, psychology and sociology.

In addition to core subjects, the correctional services option provides an opportunity to study other generally accepted subjects indigenous to a two-year correctional services program such as confinement facility administrations, correction law, counseling, probation-parole services and rehabilitation options. Similarly, the law enforcement option provides an opportunity to study other generally accepted subjects included in a two-year law enforcement services program such as criminal behavior, criminal investigation, patrol operation, traffic management, and other aspects of law enforcement administration and operations. The security services option provides an opportunity to study other generally accepted subjects related to a two-year security services program such as accident prevention and safety management, common carrier protection, fire prevention, private security, industrial security, retail security, security systems and surveillance.

Job opportunities are available with federal, state, county and municipal governments. In addition, knowledge , skills and attitudes acquired in this course of study qualifies one for job opportunities with private enterprise in such areas as industrial, retail and private security.

CRIMINAL JUSTICE—PROTECTIVE SERVICES TECHNOLOGY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
CJC	101	Introduction to Criminal Justice	3	0	0	3
CJC	104	Patrol Procedure and Traffic Law Enforcement	3	0	0	3
ENG	101	Grammar	3	0	0	3
MAT	121	Technical Mathematics	5	0	0	5
SOC	102-C	Principles of Sociology	3	0	0	3
			17	0	0	17
SECOND QUARTER						
BUS	102	Typewriting	2	0	3	3
CJC	103	Introduction to Criminal Investigation	3	0	0	3
CJC	115	Criminal Law	5	0	0	5
ENG	102	Composition	3	0	0	3
SOC	206-C	American Institutions	3	0	0	3
			16	0	3	17
THIRD QUARTER						
CJC	118	Defensive Tactics	0	0	3	1
CJC	203	Forensic Photography	2	0	3	3
CJC	210	Criminal Investigation	3	0	0	3
CJC	222	Crime Scene Investigation	2	0	0	2
ENG	103	Report Writing	3	0	0	3
PSY	217	Introduction to Psychology	3	0	0	3
			13	0	6	15
FOURTH QUARTER						
CJC	102	Introduction to Criminology	3	0	0	3
CJC	106	Police Instructor Training	3	0	0	3
CJC	—	Criminal Justice Elective	3	0	0	3
EDP	201	BASIC Language Programming I	2	0	3	3
ENG	204	Oral Communication	3	0	0	3
			14	0	3	15
FIFTH QUARTER						
CHM	101	Introduction to Chemistry	4	2	0	5
CJC	105	Firearms	0	0	6	2
CJC	140	Fingerprint Identification	4	0	0	4
EDP	210	BASIC Language Programming II	2	0	3	3
ENG	104	Reading and Composition	3	0	0	3
			13	2	9	17
SIXTH QUARTER						
BIO	101-C	Human Anatomy and Physiology	2	2	0	3
CJC	211	Introduction to Criminalistics	4	0	0	4
CJC	220	Law Enforcement Organization and Management	3	0	0	3
PHY	225	Forensic Physics	3	2	0	4
			12	4	0	14

SEVENTH QUARTER						
CJC	214	Pre-Service Law Enforcement Training	3	0	6	5
CJC	215	Law Enforcement Probationary Training	12	6	3	16
CJC	216	Police Officer Training	0	2	0	1
CJC	217	Deputy Sheriff Training	1	2	0	2
			16	10	9	24
CRIMINAL JUSTICE ELECTIVES						
CJC	141	Handwriting Identification	3	0	0	3
CJC	205	Scientific Evidence	3	0	0	3
CJC	208	Arson Investigation	3	0	0	3
CJC	221	Law Enforcement Supervision	3	0	0	3
CJC	224	Industrial Security	3	0	0	3
CJC	240	Firearms Identification	1	0	3	2
CJC	103	State and Local Government	3	0	0	3

See pages 78 to 120 for course descriptions.

ELECTRONICS ENGINEERING TECHNOLOGY

The Electronics Technology curriculum provides a basic background in electronic related theory, with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may work as assistants to engineers or as liaisons between engineers and skilled craftspersons.

The electronics technician will start in one or more of the following areas: research, design, development, production, maintenance or sales. The graduate may begin as an electronics technician, engineering aide, laboratory technician, supervisor, or equipment specialist.

Prerequisites: In addition to general admissions requirements, at least one year of high school algebra or the equivalent is required.

ELECTRONICS ENGINEERING TECHNOLOGY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
ELC	107-F	Electricity I	4	0	6	6
ELN	101	Electronic Project	0	2	0	1
ELN	106	Electronics I	2	0	6	4
ENG	101	Grammar	3	0	0	3
MAT	121	Technical Mathematics	5	0	0	5
			14	2	12	19
SECOND QUARTER						
ELC	108-F	Electricity II	4	0	6	6
ELN	107	Electronics II	4	0	6	6
ENG	102	Composition	3	0	0	3
MAT	122	Technical Mathematics	5	0	0	5
			16	0	12	20
THIRD QUARTER						
ELC	109-F	Electricity III	4	0	6	6
ELN	108	Electronics III	4	0	6	6
MAT	123	Technical Mathematics	5	0	0	5
PHY	101	Physics: Properties of Matter	3	2	0	4
			16	2	12	21
FOURTH QUARTER						
DFT	101	Technical Drafting	1	0	3	2
ELN	109	Electronics IV	3	0	6	5
ELN	110	Introduction to Digital Electronics	3	0	6	5
ENG	103	Report Writing	3	0	0	3
PHY	102	Physics: Work, Energy, and Power	3	2	0	4
			13	2	15	19
FIFTH QUARTER						
EDP	201	BASIC Language Programming I	2	0	3	3
ELN	202	Communication Electronics	3	0	6	5
ELN	229	Electronic Project	0	0	3	1
ELN	236	Industrial Field Trips	0	0	3	1
ELN	241	Digital Principles and Applications	2	0	3	3
PSY	217	Introduction to Psychology	3	0	0	3
			10	0	18	16
SIXTH QUARTER						
ELN	230	Electronic Project	0	0	6	2
ELN	238	Antenna and Transmission Line Theory	2	0	3	3
ELN	251	Microprocessors I	2	0	6	4
ENG	204	Oral Communication	3	0	0	3
SOC	102-C	Principles of Sociology	3	0	0	3
			10	0	15	15
SEVENTH QUARTER						
ELN	220	Electronic Systems	3	0	3	4
ELN	231	Electronic Project	0	0	6	2
ELN	252	Microprocessors II	2	0	6	4
PHY	104-C	Physics: Light and Sound	3	2	0	4
SOC	206-C	American Institutions	3	0	0	3
			11	2	15	17

See pages 78 to 120 for course descriptions.

GENERAL OCCUPATIONAL TECHNOLOGY

The General Occupational Technology curriculum is designed to meet the needs of students who are employed full-time and/or part-time employees in business and industry. This program of study provides these individuals with an opportunity to upgrade their skills and/or to earn an Associate degree by taking courses suited to their occupational needs. The curriculum consists of a basic core of courses in communications, mathematics and the social sciences. The balance of the curriculum consists of a sequence of technical courses individually tailored to satisfy the requirements of the student and/or the student's employer.

GENERAL OCCUPATIONAL TECHNOLOGY

General Education—Students are required to complete a minimum of eighteen (18)—maximum of twenty-seven (27) quarter hours from the following English, social science, and/or humanities courses:

			HOURS PER WEEK Class	Lab	Manipulative Lab	Quarter Hours Credit
GENERAL EDUCATION COURSES						
ENG	101	Grammar	3	0	0	3
ENG	101-C	Grammar and Composition	3	2	0	4
ENG	102	Composition	3	0	0	3
ENG	102-C	Grammar and Composition	3	2	0	4
ENG	103	Report Writing	3	0	0	3
ENG	104	Reading and Composition	3	0	0	3
ENG	204	Oral Communication	3	0	0	3
ENG	206	Business Communications	3	0	0	3
PSY	217	Introduction to Psychology	3	0	0	3
SOC	102-C	Principles of Sociology	3	0	0	3
SOC	206-C	American Institutions	3	0	0	3

Related—Courses supporting and enriching the foundation of major technical courses are to be selected from the following list with a minimum of thirty-one (31)—maximum of fourty-two (42) quarter hours:

RELATED COURSES						
BIO	101-C	Human Anatomy and Physiology	2	2	0	3
BUS	102	Typewriting I	2	0	3	3
BUS	102-C	Typewriting	0	0	3	1
BUS	103	Typewriting II	2	0	3	3
BUS	115-C	Business Law I	5	0	0	5
BUS	116-C	Business Law II	5	0	0	5
BUS	120	Accounting I	5	2	0	6
BUS	121	Accounting II	5	2	0	6
BUS	128	Computerized Accounting	1	2	0	2
BUS	183	Terminology and Vocabulary	3	0	0	3
BUS	213-C	Office Procedures	1	2	0	2
BUS	222	Word Processing	2	0	3	3
BUS	232-C	Sales Development	3	0	0	3
BUS	235-C	Business Management	3	2	0	4
CHM	101	Introduction to Chemistry	4	2	0	5
DFT	101	Technical Drafting	1	0	3	2
DFT	104	Blueprint Reading: Mechanical	3	0	0	3
DFT	117	Drafting and Blueprint Reading	3	0	3	4
ECO	102	Economics I	3	0	0	3
ECO	104	Economics II	5	0	0	5
EDP	100	Computer Literacy	3	2	0	4
EDP	101	Computer Familiarization	1	0	0	1
EDP	104-C	Data Processing Theory	3	0	0	3
EDP	201	BASIC Language Programming I	2	0	3	3
EDP	250	BASIC Business Programming	2	2	0	3
ENG	206	Business Communications	3	0	0	3
MAT	101	Technical Mathematics	5	0	0	5
MAT	102	Technical Mathematics	5	0	0	5

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
MAT	103	Technical Mathematics	5	0	0	5
MAT	110	Business Mathematics	5	0	0	5
MAT	201	Technical Mathematics	5	0	0	5
MAT	121	Technical Mathematics	5	0	0	5
MAT	122	Technical Mathematics	5	0	0	5
MAT	123	Technical Mathematics	5	0	0	5
MAT	130	Advanced Business Mathematics	5	0	0	5
MAT	131	Applied Math for Chemistry I	2	2	0	3
MAT	132	Applied Math for Chemistry II	2	2	0	3
MAT	211	Basic Statistics	5	0	0	5
MEC	107	Process Instrumentation	3	0	0	3
MEC	120	Industrial Methods	1	4	0	3
MEC	205	Strength of Materials	3	2	0	4
MEC	215	Metallurgy	3	2	0	4
MEC	235-C	Hydraulics and Pneumatics	3	0	3	4
PHO	110	Introduction to Photography	1	0	3	2
PHY	100	Introductory Physics	4	2	0	5
PHY	101	Physics: Properties of Matter	3	2	0	4
PHY	102	Physics: Work, Energy, and Power	3	2	0	4
PHY	103	Physics: Electricity	3	2	0	4
PHY	104-C	Physics: Light and Sound	3	2	0	4
PHY	105	Physics: Heat and Fluids	3	2	0	4
PHY	225	Forensic Physics	3	2	0	4
PSY	217	Introduction to Psychology	3	0	0	3
SOC	219	The Family in Society	3	0	0	3

Major—Technical courses are individually tailored to satisfy the requirements of the students and/or the student's employer with a minimum of sixty (60)—maximum seventy-one (71) quarter hours of credit. Students may select courses either from the following technical list or from any of the technical course offerings in the Institute's catalog as long as the courses are not listed under the general or related listings above:

MAJOR COURSES

BIO	101	Human Anatomy and Physiology I	4	2	0	5
BIO	107	Human Anatomy and Physiology II	4	2	0	5
BIO	115	Medical Terminology and Vocabulary I	3	0	0	3
BIO	116	Medical Terminology and Vocabulary II	3	0	0	3
BIO	117	Medical Terminology and Vocabulary III	3	0	0	3
BIO	129	Marine Animals of North Carolina	4	0	0	4
BIO	131-C	Marine Biology	3	0	0	3
BUS	101	Introduction to Business	5	0	0	5
BUS	116-C	Business Law II	5	0	0	5
BUS	126	Personal Finance	3	0	0	3
CAD	242	Computer Graphics	3	0	3	4
CHM	118	Basic Chemistry	2	2	0	3
CIV	103	Surveying for Construction Trades	4	4	0	6
CON	101	Construction Estimating	3	0	3	4
DFT	105	Pipe Drafting I	2	2	0	3
DFT	114	Pipe Drafting II	3	0	0	3
DFT	208-C	Introduction to Architectural Drafting	3	0	9	6
DMK	163	Fundamentals of Real Estate	6	0	0	6
DMK	164	Real Estate Law	3	0	0	3
DMK	209	Real Estate Finance	3	0	0	3
DMK	271	Real Estate Brokerage Operations	3	0	0	3

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
DMK	292	Real Estate Appraisal I	3	0	0	3
DMK	296	Property Management	3	0	0	3
ECO	108	Consumer Economics	3	0	0	3
EDP	202	FORTRAN Language Programming I	2	0	3	3
EDP	203	FORTRAN 77	2	4	0	4
EDP	211	Extended BASIC Language Programming	2	0	3	3
EDP	220	COBOL I	2	4	0	4
EDP	221	COBOL II	2	4	0	4
EDP	222	COBOL III	2	4	0	4
EDP	224	RPG II	2	4	0	4
EDP	225	Advanced RPG	2	4	0	4
EDP	230	PASCAL	2	4	0	4
EDU	205	Teaching Methods	1	2	0	2
EDU	231	Creative Activities	3	0	0	3
EDU	233	Nutrition	3	0	0	3
ELN	210	Electronics	2	2	0	3
GEO	102	Geology of the Oceans	4	0	0	4
HEA	109	Medical Ethics, Law, and Economics	3	0	0	3
HEA	110	Clinical Practice	3	0	0	3
INS	214	Introduction to Insurance	2	0	0	2
INS	215	Life, Accident, and Health Insurance	2	0	0	2
INS	216	Fire and Casualty Insurance	2	0	0	2
ISC	113	Industrial Safety	2	0	0	2
MEC	111	Industrial Mechanics I	5	2	0	6
MEC	112	Industrial Mechanics II	3	2	0	4
MEC	115	Industrial Pipefitting I	1	2	0	2
MEC	116	Industrial Pipefitting II	4	2	0	5
MEC	118	Introduction to Manufacturing Engineering	4	0	0	4
MEC	240	Radiographic Testing	4	0	0	4
MEC	246	NDT Surface Testing, Magnetic Particle and Liquid Penetrant	4	0	0	4
MEC	248	Ultrasonic Testing	4	0	0	4
MET	101	Introduction to Meteorology	3	0	0	3
MGT	104	The Art of Motivating People	2	0	0	2
MGT	105	Human Relations and Communications	2	0	0	2
MSC	115	Construction of Gill Nets	1	0	3	2
MSC	218	Eddy Current Testing	2	0	0	2
PHO	200	Intermediate Photography	1	0	3	2
PHO	210	Advanced Photography	1	0	3	2
PME	105	Outboard Motor Repair	1	0	3	2
PME	111	Emission Systems Diagnosis	2	2	0	3
PME	112	Marine Diesel and Gasoline Engines	2	2	0	3
PSY	211	Stress Management	3	0	0	3

See pages 78 to 120 for course descriptions.

GENERAL OFFICE

The purposes of the General Office curriculum are to: (1) prepare the individual to enter clerical-office occupations, (2) provide an educational program for individuals wanting education for upgrading (moving from one position to another) or retraining (moving from present position to a clerical position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

The purpose will be fulfilled through skill development in the areas of typewriting, filing and business machines. Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in office-related activities.

GENERAL OFFICE

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
BUS	102	Typewriting I	2	0	3	3
EDP	104-C	Data Processing Theory	3	0	0	3
ENG	101-C	Grammar and Composition	3	2	0	4
MAT	110	Business Mathematics	5	0	0	5
PSY	217	Introduction to Psychology	3	0	0	3
			16	2	3	18
SECOND QUARTER						
BUS	103	Typewriting II	2	0	3	3
BUS	120	Accounting I	5	2	0	6
ENG	102-C	Grammar and Composition	3	2	0	4
MAT	130	Advanced Business Mathematics	5	0	0	5
SOC	102-C	Principles of Sociology	3	0	0	3
			18	4	3	21
THIRD QUARTER						
BUS	104	Typewriting III	2	0	3	3
BUS	121	Accounting II	5	2	0	6
BUS	128	Computerized Accounting—Electronic Spreadsheet	1	2	0	2
BUS	183	Terminology and Vocabulary	3	0	0	3
ENG	104	Reading and Composition	3	0	0	3
			14	4	3	17
FOURTH QUARTER						
BUS	122	Accounting III	5	2	0	6
BUS	205	Advanced Typewriting I	2	0	3	3
BUS	229	Taxes I	3	2	0	4
ECO	102	Economics I	3	0	0	3
			13	4	3	16
FIFTH QUARTER						
BUS	209	Advanced Typewriting II	2	0	3	3
BUS	239	Marketing	5	0	0	5
ECO	104	Economics I	3	0	0	3
EDP	250	BASIC Business Programming	2	2	0	3
ENG	204	Oral Communication	3	0	0	3
ENG	206	Business Communications	3	0	0	3
			18	2	3	20
SIXTH QUARTER						
BUS	112	Filing	3	0	0	3
BUS	213-C	Office Procedures	1	2	0	2
BUS	222	Word Processing	2	0	3	3
BUS	232-C	Sales Development	3	0	0	3
BUS	235-C	Business Management	3	2	0	4
SOC	206-C	American Institutions	3	0	0	3
			15	4	3	18

See pages 78 to 120 for course descriptions.

INSTRUMENTATION TECHNOLOGY

The Instrumentation Technology curriculum provides a program of study to develop knowledge of measuring and controlling devices and to develop the technical skills involved in the application of instrument control to processes, systems, and operations of modern industry. The instrumentation technician is a key person in keeping a processing plant operating. This individual is responsible for both production and production control and must deal with variables such as temperature, pressure, flow, level, humidity, density and viscosity that affect manufacturing processes. In many plants when a piece of equipment breaks down, employees are laid off until the instrumentation person can repair the equipment and production is resumed. This person's knowledge of mechanics, electronics, pneumatics and the manufacturing processes is the key factor in how quickly a machine or plant may again resume operation.

The instrumentation technician may select, install, calibrate, check out and maintain sensing, telemetering, and recording instrumentation and circuitry. Other functions may include devising, setting up and operating instrumentation equipment involved in testing mechanical, structural or electrical equipment. The graduate may work as an instrumentation technician, engineering aide or associate, service specialist, laboratory technician or instrument field service technician.

Prerequisites: In addition to general admission requirements, at least one year of high school algebra or the equivalent is required.

INSTRUMENTATION TECHNOLOGY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
ELC	107-F	Electricity I	4	0	6	6
ELN	101	Electronic Project	0	2	0	1
ELN	106	Electronics I	2	0	6	4
ENG	101	Grammar	3	0	0	3
MAT	121	Technical Mathematics	5	0	0	5
			14	2	12	19
SECOND QUARTER						
ELC	108-F	Electricity II	4	0	6	6
ELN	107	Electronics II	4	0	6	6
ENG	102	Composition	3	0	0	3
MAT	122	Technical Mathematics	5	0	0	5
			16	0	12	20
THIRD QUARTER						
ELC	109-F	Electricity III	4	0	6	6
ELN	108	Electronics III	4	0	6	6
MAT	123	Technical Mathematics	5	0	0	5
PHY	101	Physics: Properties of Matter	3	2	0	4
			16	2	12	21
FOURTH QUARTER						
DFT	101	Technical Drafting	1	0	3	2
ELN	109	Electronics IV	3	0	6	5
ELN	110	Introduction to Digital Electronics	3	0	6	5
ENG	103	Report Writing	3	0	0	3
PHY	102	Physics: Work, Energy, and Power	3	2	0	4
			13	2	15	19
FIFTH QUARTER						
ELN	224	Measurement and Control I	2	0	9	5
ELN	236	Industrial Field Trips	0	0	3	1
ELN	241	Digital Principles and Applications	2	0	3	3
PHY	105	Physics: Heat and Fluids	3	2	0	4
PSY	217	Introduction to Psychology	3	0	0	3
			10	2	15	16
SIXTH QUARTER						
ELN	225	Measurement and Control II	2	0	9	5
ELN	251	Microprocessors I	2	0	6	4
PHY	104-C	Physics: Light and Sound	3	2	0	4
SOC	102-C	Principles of Sociology	3	0	0	3
			10	2	15	16
SEVENTH QUARTER						
ELN	226-C	Measurement and Control III	2	0	9	5
ELN	252	Microprocessors II	2	0	6	4
ENG	204	Oral Communication	3	0	0	3
SOC	206-C	American Institutions	3	0	0	3
			10	0	15	15

See pages 78 to 120 for course descriptions.

MARINE TECHNOLOGY

The Marine Technology curriculum is designed to provide courses in science, English, mathematics, and practical skills esential for success in the field of marine science support. This curriculum provides the student with the opportunity to become proficient in the knowledge and skills of the scientific support technician by practical training aboard ship as well as in the classroom. The Marine Technology curriculum prepares individuals to use and maintain new and sophisticated instruments such as electronic navigation devices, precision positioning systems, acoustical releases, and data acquisition and reduction systems aboard ocean-going and other types of vessesl.

Graduates of this program will be qualified to work in the following areas: data acquisition and reduction, environmental monitoring, geophysical exploration, general oceanography, field and laboratory biology, marine chemical analysis, water and wastewater treatment laboratory analysis, nuclear power plant technology, fishing gear construction and repair, vessel maintenance and repair, offshore oil drilling, fishing, marine salvage and other marine scientific activities. Employment opportunities are available with various state and federal agencies and with private businesses and industry associated with marine operation and research.

MARINE TECHNOLOGY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
BIO	131	Marine Biology	2	0	3	3
ENG	101	Grammar	3	0	0	3
MAT	121	Technical Mathematics	5	0	0	5
MSC	109	Oceanography I	3	0	0	3
MSC	111	Net Construction Methods	1	0	3	2
MSC	129	Power Boat Handling	1	0	3	2
PSY	217	Introduction to Psychology	3	0	0	3
SHI	101	Ocean Survey/Marine Projects	(60 Clock Hours)			2
						23
SECOND QUARTER						
BIO	132	Marine Invertebrate Zoology	2	0	3	3
CHM	101	Introduction to Chemistry	4	2	0	5
HED	121	First Aid and Marine Safety	3	0	0	3
MAT	122	Technical Mathematics	5	0	0	5
MSC	101	Navigation I	2	2	0	3
MSC	110	Oceanography II	3	0	0	3
MSC	117	Practical Experience I	0	0	3	1
SHI	102	Ocean Survey/Marine Projects	(60 Clock Hours)			2
						25
THIRD QUARTER						
BIO	112	Field Ecology	1	0	3	2
BUS	102-C	Typewriting	0	0	3	1
CHM	109	Water Analysis I	1	0	3	2
MAT	123	Technical Mathematics	5	0	0	5
MSC	102	Navigation II	2	2	0	3
PHO	110	Introduction to Photography	3	0	0	3
SHI	103	Ocean Survey/Marine Projects	(60 Clock Hours)			2
WLD	134	Marine Welding	1	0	3	2
						19
FOURTH QUARTER						
ENG	102	Composition	3	0	0	3
MSC	108	Oceanographic Instrumentation	2	0	3	3
MSC	112	Biological Net Construction I	1	0	3	2
MSC	118	Practical Experience II	0	0	3	1
PHY	101	Physics: Properties of Matter	3	2	0	4
PME	101	Marine Engines I	1	0	3	2
SHI	104	Ocean Survey/Marine Projects	(60 Clock Hours)			2
						17

			HOURS PER WEEK Class	Lab	Manipulative Lab	Quarter Hours Credit
FIFTH QUARTER						
BIO	201	Aquarium Systems	1	2	0	2
EDP	201	BASIC Language Programming I	2	0	3	3
ENG	103	Report Writing	3	0	0	3
MSC	113	Biological Net Construction II	1	0	3	2
MSC	130	Seamanship	2	0	0	2
PHY	102	Physics: Work, Energy, and Power	3	2	0	4
PME	102	Marine Engines II	1	0	3	2
SHI	105	Ocean Survey/Marine Projects	(60 Clock Hours)			2
						20
SIXTH QUARTER						
ELC	107-A	Electricity I	2	0	3	3
ENG	204	Oral Communication	3	0	0	3
GEO	101	Marine Geology	3	2	0	4
MAT	211	Basic Statistics	5	0	0	5
MSC	121	Ship and Marine Equipment Repair	0	0	3	1
MSC	202	Data Processing I	1	0	3	2
SHI	106	Ocean Survey/Marine Projects	(60 Clock Hours)			2
SOC	102-C	Principles of Sociology	3	0	0	3
						22
SEVENTH QUARTER						
BIO	213	Marine Vertebrate Zoology	3	2	0	4
CHM	224	Water Analysis II	2	2	0	3
DFT	117	Drafting and Blueprint Reading	3	0	3	4
ELC	108-A	Electricity II	2	0	3	3
MSC	119	Practical Experience III	0	0	3	1
MSC	205	Data Processing II	1	0	3	2
SHI	107	Ocean Survey/Marine Projects	(60 Clock Hours)			2
						19
EIGHTH QUARTER						
ELN	140	Introduction to Marine Electronics	4	2	0	5
MSC	114	Biological Sampling Methods	0	4	0	2
MSC	204	Environmental Measurements	2	4	0	4
MSC	220	Practical Experience IV	0	0	3	1
SHI	108	Ocean Survey/Marine Projects	(60 Clock Hours)			2
SOC	206-C	American Institutions	3	0	0	3
						17

See pages 78 to 120 for course descriptions.

MECHANICAL DRAFTING AND DESIGN TECHNOLOGY

The Mechanical Drafting and Design curriculum prepares mechanical draftsmen. Emphasis is placed upon ability to think and plan, as well as upon drafting procedures and techniques used by mechanical draftsmen.

Mechanical drafting and design technicians perform many aspects of drafting, such as developing the drawing of a section, subassembly or major component. Investigating design factors and availability of materials and equipment, production methods and facilities are frequent assignments. They assist in the design of units and control from specifications by utilizing drawings of existing units and reports on functional performance. They may draw components in industrial fields based on engineers' original design concepts or specific ideas. Also, they may be assigned as coordinators for the execution of related work or other design, production, tooling, material and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings. These technicians are employed in many types of manufacturing, fabrication, research development and service industries. Substantial numbers also are employed in communications, transportation, public utilities, consulting engineering firms, and federal, state and local governments.

In the Drafting and Design curriculum three quarters of Computer Aided Drafting has been included. This will allow the student to enter industry as a CAD operator.

MECHANICAL DRAFTING AND DESIGN TECHNOLOGY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
DFT	101-C	Technical Drafting	3	0	9	6
ENG	101	Grammar	3	0	0	3
MAT	121	Technical Mathematics	5	0	0	5
MEC	209-C	Introduction to Metallurgy	3	2	0	4
			14	2	9	18
SECOND QUARTER						
DFT	102-C	Technical Drafting	3	0	9	6
ENG	102	Composition	3	0	0	3
MAT	122	Technical Mathematics	5	0	0	5
MEC	216	Industrial Materials	5	0	0	5
			16	0	9	19
THIRD QUARTER						
DFT	103-C	Technical Drafting	3	0	9	6
ENG	103	Report Writing	3	0	0	3
ENG	204	Oral Communication	3	0	0	3
MAT	123	Technical Mathematics	5	0	0	5
PSY	217	Introduction to Psychology	3	0	0	3
			17	0	9	20
FOURTH QUARTER						
DFT	201-F	Technical Drafting and Computer Graphics	6	0	9	9
MEC	120	Industrial Methods	1	4	0	3
PHY	100	Introductory Physics	4	2	0	5
SOC	102-C	Principles of Sociology	3	0	0	3
			14	6	9	20
FIFTH QUARTER						
DFT	205-F	Technical Drafting and Computer Graphics	6	0	9	9
PHY	103	Physics: Electricity	3	2	0	4
PHY	106-C	Applied Mechanics	3	2	0	4
SOC	206-C	American Institutions	3	0	0	3
			15	4	9	20
SIXTH QUARTER						
DFT	206-F	Design Drafting and Computer Graphics	6	0	9	9
MEC	205	Strength of Materials	3	2	0	4
MEC	235-C	Hydraulics and Pneumatics	3	0	3	4
			12	2	12	17

See pages 78 to 120 for course descriptions.

PARALEGAL TECHNOLOGY

The Paralegal Technology curriculum trains individuals to work under the general direction of lawyers, to relieve lawyers of routine matters, and to assist them in the conduct of more complicated and difficult tasks. The legal technician should be capable of doing independent legal work under the supervision of a lawyer, supervise secretaries in their work for the lawyer, and search out information and court facts for the lawyer. Training will include general subjects such as English, accounting and psychology, as well as specialized legal courses such as legal definitions, court systems, laws and techniques of investigation.

Graduates of the Paralegal Technology curriculum should be able to directly assist a lawyer or group of lawyers in most facets of law, but they must always work under the supervision of a lawyer. The legal technician will not be qualified to give legal advice, enter into courtroom procedure, or be involved in litigation except as an assistant to the lawyer. Paralegal graduates will be able to assist in work on probate matters, conducting investigations, searching public records, preparation of tax forms, serving and filing legal documents, bookkeeping, library research, and providing office management assistance. Employment opportunities are available in public and private law firms and with individual lawyers.

PARALEGAL TECHNOLOGY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
BUS	102	Typewriting I	2	0	3	3
LEG	101	Introduction to Paralegalism	3	0	0	3
LEG	115	Commercial Law I	5	0	0	5
LEG	135	Legal Systems	5	0	0	5
MAT	110	Business Mathematics	5	0	0	5
			20	0	3	21
SECOND QUARTER						
BUS	103	Typewriting II	2	0	3	3
BUS	120	Accounting I	5	2	0	6
ENG	101	Grammar	3	0	0	3
LEG	116	Commercial Law II	5	0	0	5
MAT	130	Advanced Business Math	5	0	0	5
			20	2	3	22
THIRD QUARTER						
BUS	121	Accounting II	5	2	0	6
ENG	206	Business Communications	3	0	0	3
LEG	132	Legal Research/Bibliography	4	6	0	7
LEG	214	Property I	3	0	0	3
			15	8	0	19
FOURTH QUARTER						
LEG	113	Family Law	3	0	0	3
LEG	117	Torts and Litigation Preparation	3	0	0	3
LEG	215	Property II: Title Search	3	2	0	4
LEG	217	Elements of Criminal Law and Procedures	5	0	0	5
			16	2	0	17
FIFTH QUARTER						
BUS	128	Computerized Accounting—Electronic Spreadsheet	1	2	0	2
BUS	229	Taxes I	3	2	0	4
LEG	224	Wills	3	2	0	4
LEG	230	Bankruptcy and Collection	3	0	0	3
PSY	217	Introduction to Psychology	3	0	0	3
			13	6	0	16
SIXTH QUARTER						
BUS	222	Word Processing	2	0	3	3
BUS	230	Taxes II	3	2	0	4
LEG	225	Law Office Management	3	0	0	3
—	—	Elective	3	0	0	3
SOC	102-C	Principles of Sociology	3	0	0	3
			14	2	3	16
SEVENTH QUARTER						
ENG	204	Oral Communication	3	0	0	3
LEG	290	Paralegal Internship	0	(20 Co-op)		2
LEG	291	Paralegal Office Procedures	3	0	0	3
			6	0	20	8

See pages 78 to 120 for course descriptions.

SECRETARIAL—ENGINEERING AND TECHNICAL

The purposes of the Secretarial—Engineering and Technical curriculum are to: (1) prepare the individual to enter the secretarial profession in firms concerned with research, development and production, (2) provide an educational program for individuals wanting education for upgrading (moving from one scientific secretarial position to another), or retraining (moving from present position to a scientific secretarial position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of typewriting, shorthand, transcription, and business machines and through knowledge of the scientific method, the need for scientific accuracy and a technical vocabulary. Through these skills the individual will be able to perform office-related activities and through the development of personal competencies and qualities will be provided the opportunity to enter the engineering or technical secretarial profession.

SECRETARIAL—ENGINEERING AND TECHNICAL

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
BUS	102	Typewriting I	2	0	3	3
BUS	106	Shorthand I	3	2	0	4
ENG	101-C	Grammar and Composition	3	2	0	4
MAT	110	Business Mathematics	5	0	0	5
PSY	217	Introduction to Psychology	3	0	0	3
			16	4	3	19
SECOND QUARTER						
BUS	103	Typewriting II	2	0	3	3
BUS	107	Shorthand II	3	2	0	4
BUS	120	Accounting I	5	2	0	6
ENG	102-C	Grammar and Composition	3	2	0	4
MAT	130	Advanced Business Mathematics	5	0	0	5
			18	6	3	22
THIRD QUARTER						
BUS	104	Typewriting III	2	0	3	3
BUS	108	Shorthand III	3	2	0	4
BUS	115-C	Business Law I	5	0	0	5
BUS	121	Accounting II	5	2	0	6
BUS	128	Computerized Accounting—Electronic Spreadsheet	1	2	0	2
			16	6	3	20
FOURTH QUARTER						
BUS	183	Terminology and Vocabulary	3	0	0	3
BUS	205	Advanced Typewriting I	2	0	3	3
BUS	206	Dictation and Transcription I	3	2	0	4
ECO	102	Economics I	3	0	0	3
EDP	104-C	Data Processing Theory	3	0	0	3
ENG	204	Oral Communication	3	0	0	3
PSY	217	Introduction to Psychology	3	0	0	3
			17	2	3	19
FIFTH QUARTER						
BUS	207-C	Dictation and Transcription II	3	2	0	4
BUS	209	Advanced Typewriting II	2	0	3	3
DFT	104	Blueprint Reading-Mechanical	3	0	0	3
EDP	250	BASIC Business Programming	2	2	0	3
ENG	206	Business Communications	3	0	0	3
SOC	102-C	Principles of Sociology	3	0	0	3
			16	4	3	19
SIXTH QUARTER						
BUS	112	Filing	3	0	0	3
BUS	213-C	Office Procedures	1	2	0	2
BUS	222	Word Processing	2	0	3	3
BUS	235-C	Business Management	3	2	0	4
SOC	206-C	American Institutions	3	0	0	3
			12	4	3	15

See pages 78 to 120 for course descriptions.

TECHNICAL COURSE DESCRIPTIONS

BIO 101—Human Anatomy and Physiology I
A study of the organizational plan of the human body and the body systems concerned with motor activities, control and integration of functions, and reproduction. Laboratory experiences provide opportunities to see animal specimens illustrative of systems being studied.
Course Hours Per Week: Class 4, Lab 2. Quarter Hours Credit 5.
Prerequisite: None

BIO 101-C—Human Anatomy and Physiology
A study of the organizational plan of the human body and the body systems concerned with motor activities, control and integration of functions, and reproduction. Laboratory experiences provide opportunities to see animal specimens illustrative of systems being studied.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

BIO 107—Human Anatomy and Physiology II
A study of the structure and normal function of the human body with man identified as a living organism composed of living cells, tissues, organs, and systems. Included are the basic physiologic aspects of skin; the skeletal, articular, muscular, and nervous systems; and the special senses. A laboratory portion should include relevant experiments to augment the student's learning of body structure and function.
Course Hours Per Week: Class 4, Lab 2. Quarter Hours Credit 5.
Prerequisite: None

BIO 112—Field Ecology
A field course in which the student will be involved in doing ecological surveys of the Cape Fear region. Collection methods and data compilation will be emphasized throughout the course.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisites: BIO 131, BIO 132, CHM 101 or Approval of Instructor
Corequisite: CHM 109

BIO 115—Medical Terminology and Vocabulary I
An introductory course for paramedical personnel, which deals with basic tools for building a medical vocabulary and mastering the identification of anatomical roots, prefixes and suffixes of words, as well as Greek and Latin verbs and adjectives. Anatomical body parts, diseases, operations, tumors, drugs, and descriptive terms are emphasized by analysis of their terms and structures of the words.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

BIO 116—Medical Terminology and Vocabulary II
Continuation of the study of medical terminology in building a medical vocabulary which deals with the mastery of the identification of anatomical roots, prefixes, and suffixes of words, as well as Greek and Latin verbs and adjectives. Anatomical body parts, diseases, operations, tumors, drugs, and descriptive terms are emphasized by analysis of the terms and structure of the words. Additional emphasis will be in the area of mental health and illness as well as anesthesia and laboratory terminology.
Course Hours Per Week: Class 3. Quarter Hours Per Week 3.
Prerequisite: BIO 115

BIO 117—Medical Terminology and Vocabulary III
This course is a continuation and conclusion of the study of medical terminology and building of a medical vocabulary. Anatomical body parts, diseases, operations, drugs and mental disorders will be discussed.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: BIO 116

BIO 129—Marine Animals of North Carolina
A lecture course introducing the student to marine organisms in North Carolina. Marine plankton, jellyfish, seashells, starfish, fishes, birds, and whales will be briefly studied. Preserved specimens will be used when available. Films and slides will also be utilized.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None

BIO 131—Marine Biology
Marine and estuarine habitats and organisms will be examined in the course. An ecological approach to the study of organisms in the local marine communities will be taken.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

BIO 131-C—Marine Biology
A survey course designed to acquaint the student with the classification and natural history of marine organisms common to the North Carolina coast.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

BIO 132—Marine Invertebrate Zoology
Taxonomy and classification of marine invertebrate animals will be studied in this course. Preserved animals will be utilized for learning the taxonomic relationships between various marine invertebrates. Laboratory periods will be used to study some of the behavioral characteristics of selected animals.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

BIO 201—Aquarium Systems
This is a laboratory oriented course emphasizing the proper techniques of setting up marine aquaria and maintaining healthy marine animals in a closed seawater system.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: None

BIO 213—Marine Vertebrate Zoology
Identification, classification, and natural history of marine vertebrates are the studies in this course.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

BUS 101—Introduction to Business
A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

BUS 102—Typewriting I
This course is an introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. The minimum speed requirement is 20 gross words a minute with 5 errors allowed.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

BUS 102-C—Typewriting
Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. A minimum speed requirement of 20 gross words a minute with 5 errors allowed.
Course Hours Per Week: M. Lab 3. Quarter hours Credit 1.
Prerequisite: None

BUS 103—Typewriting II
Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms. Minimum speed requirement is 30 gross words a minute with 5 errors allowed.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: BUS 102 or Equivalent

BUS 104—Typewriting III
This course places emphasis on production typing problems and speed building. Attention to the development of the student's ability to function as an expert typist, and producing mailable copies are stressed. The production units are tabulation, manuscript, correspondence and business forms. The minimum speed requirement is 35 gross words a minute with 4 errors allowed.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: BUS 103 or Equivalent

BUS 106—Shorthand I
A beginning course in the theory and practice of reading and writing Gregg Shorthand. Emphasis is placed on phonetics, penmanship, word families, brief forms, and phrases.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

BUS 107—Shorthand II
This course is a continuation of the theory and practice of Gregg Shorthand. Emphasis will be placed on continued study of theory and further development of dictation and transcription.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: BUS 106 or Equivalent

BUS 108—Shorthand III
This is a Gregg Shorthand course designed to build skill in theory and writing. Emphasis is placed on development of speed in dictation and accuracy in transcription. An introduction to office-style dictation will be used.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: BUS 107

BUS 112—Filing
A course in filing to instruct students to keep and to locate filed records. This will be accomplished by using a standard system of indexing papers to be filed.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

BUS 115-C—Business Law I
An introductory course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.
Course Hours Per Week: Class 5. Quarter Hours Credit 5
Prerequisite: None

BUS 116-C—Business Law II
This is a follow-up course to Business Law I with a more in-depth study of law covering such topics as bailments, sales, riskbearing, partnership, corporation, mortgages, and property rights.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: BUS 115-C

BUS 120—Accounting I
This first course in accounting covers the principles, techniques, and tools of accounting. The student is introduced to the mechanics of accounting. The process of accounting includes the collecting, summarizing, and analysis of financial information.
Course Hours Per Week: Class 5, Lab 2. Quarter Hours Credit 6.
Prerequisite: MAT 110

BUS 121—Accounting II
This course is a study of partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management controls rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.
Course Hours Per Week: Class 5, Lab 2. Quarter Hours Credit 6.
Prerequisite: BUS 120

BUS 122—Accounting III
This course is concerned with the design of the system of records, the preparation of reports based on recorded data, and the interpretation of the reports in a business firm. The use of accounting data and reports provides management with the information as to what has taken place in the business and how the information is used to make future business decisions.
Course Hours Per Week: Class 5, Lab 2. Quarter Hours Credit 6.
Prerequisite: BUS 121

BUS 123-C—Business Finance I
This course explains the scope, principles, and social importance of business finance to the different types of business ownership in our economic systems. Through the analysis of the financial statements — the balance sheets and income statements—the sources and uses of funds may be obtained for any form of business.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: BUS 121

BUS 124-C—Business Finance II
This course explains the scope, principles, and social importance of business finance to the different types of business ownership in our economic systems. Through the analysis of the financial statements—the balance sheets and income statements—the sources and uses of funds may be obtained for any form of business. Financial statements are used by management as the basis for planning operations, including procurement of adequate financing, and as a means of exercising control over the financial position of the business and the efficient and profitable use of assets.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: BUS 123-C

BUS 125—Accounting IV
This course examines the basic analytic tools used by a firm's management to plan, staff, finance, and control operations. Interpretation and determination of various quantitative and financial statistics is emphasized.
Course Hours Per Week: Class 5, Lab 2. Quarter Hours Credit 6.
Prerequisite: BUS 121

BUS 126—Personal Finance
This course is designed to enable the student to analyze and direct his own or family's financial affairs. The student is given a general overview in the areas of money management, borrowing, investment principles, and retirement.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

BUS 128—Computerized Accounting—Electronic Spreadsheet
This is a course in computer record keeping. The content of the course will include the general ledger and the preparation of financial statements, data entry and updating of accounts receivable and accounts payable, inventory purchase cost and control, and sales and invoice preparation.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: BUS 120

BUS 183—Terminology and Vocabulary
A thorough course in word study appropriate for use in business, technical, and professional offices. It emphasizes word spelling and meaning, with an in-depth study of word stems, prefixes, and suffixes.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

BUS 205—Advanced Typewriting I
In this course, emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work in business offices. These projects include review of letter form, methods of duplicating, statistical tabulation, and the typing of reports, manuscripts, and legal documents. The minimum speed requirement is 40 gross words a minute with 3 errors.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: BUS 104

BUS 206—Dictation and Transcription I
Dictation and Transcription I develops the skill of taking dictation and of transcribing at the typewriter. A review of theory and the dictation of familiar and unfamiliar material at varying rates of speed is the basic course content. A minimum dictation rate of 60 words per minute for three minutes on new material is required.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: BUS 108

BUS 207-C—Dictation and Transcription II
This course covers speed building materials appropriate to the course of study. The student develops the accuracy, speed, and vocabulary that enable him/her to meet the stenographic requirements of business and professional offices. A minimum dictation rate of 70 words per minute is required for three minutes on new material.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: BUS 206

BUS 209—Advanced Typewriting II
Emphasis is placed on speed building and on typing projects related to actual office situations. These include additional duplication, tabulation, and the typing of rough draft and straight copy documents, reports, and forms used in legal, technical, and business offices. A minimum speed requirement is 45 gross words a minute with 3 errors allowed.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: BUS 205

BUS 213-C—Office Procedures
Dictaphones, typewriters, electronic calculators, copying machines, and similar modern office equipment are utilized by students to efficiently produce quality office documents such as letters, memos, payrolls, invoices, manuscripts, and statistical charts in a simulated office situation.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: None

BUS 222—Word Processing
This course introduces the student to word processing procedures and equipment and is designed to familiarize students with the concept of word processing and the input and output equipment used in word processing to transform ideas and information into readable forms of communication.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: BUS 102

BUS 229—Taxes I
This course is the application of federal and state taxes to various businesses and business conditions. It is a study of the following taxes: income, payroll, intangible, capital gains, sales and use, excise, and inheritance.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: MAT 110 or MAT 121

BUS 230—Taxes II
This course is a continuation of the study of the following taxes: income, payroll, intangible, capital gains, sales and use, excise, and inheritance taxes.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: BUS 229

BUS 232-C—Sales Development
This course is a study of retail, wholesale, and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: BUS 229

BUS 235-C—Business Management
This course explains the principles of business management, including an overview of the major functions of management, such as planning, staffing, controlling, directing, and financing.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

BUS 239—Marketing
This course presents the marketing structure within the framework of the U.S. economic system. The course includes the movement of goods from producer to consumer through channels of distribution, pricing strategies, consumer behavior, and market segmentation.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

BUS 272—Principles of Supervision
The student is introduced to the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Major emphasis is placed on the role of the supervisor in securing an effective work force. Methods of supervision are stressed.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CAD 242—Computer Graphics
This course is an introduction to Computer-Aided Drafting and Design systems. It will prepare students to operate the systems and understand the applications of computer graphics to industry standards. Students will learn to use an interactive computer graphics system to prepare drawings on a CRT. They will store and retrieve drawings and related information on a magnetic disc and produce commercial quality copies using a computer-driven plotter.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisite: DFT 103-C or Consent of the Instructor

CHM 101—Introduction to Chemistry
This is a basic introduction to elements, compounds, mixtures, symbols, formulas, and weight relations in reactions and solutions. The student will be introduced to basic laboratory equipment and techniques.
Course Hours Per Week: Class 4, Lab 2. Quarter Hours Credit 5.
Prerequisite: MAT 121

CHM 109—Water Analysis I
This is a course in the practical analysis of water with emphasis on marine — oriented techniques and procedures.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: CHM 101

CHM 114—Basic Chemical Concepts I
This is the first course of a two-quarter sequence in which the basic fundamentals of chemistry are introduced. Topics to be covered include: measurements; properties of matter; elements, compounds, and mixtures; ions and compound formulas; moles; reactions and weight relations; solutions; and oxidation-reduction reactions. The laboratory sessions stress routine apparatus and techniques in conjunction with lecture material.
Course Hours Per Week: Class 5, M. Lab 6. Quarter Hours Credit 7.
Prerequisite: None

CHM 115—Basic Chemical Concepts II
This is the second course of a two-quarter sequence in which the basic fundamentals of chemistry are introduced. Topics to be covered include: electrochemistry, gases, solubility, and pH. The laboratory sessions stress routine apparatus and techniques in conjunction with lecture material. A special unit on laboratory hazards and safety is included.
Course Hours Per Week: Class 5, M. Lab 6. Quarter Hours Credit 7.
Prerequisite: CHM 114

CHM 116—Descriptive Chemistry
A course in which specific elements, their properties, compounds, sources, and uses are discussed. In the laboratory, preparation, detection, and reactions of selected groups of elements are explored. In conjunction with ENG 103, the student prepares two (2) reports on assigned elements.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: CHM 115

CHM 117-C—Unit Processes
A laboratory course in which the student sets up and carries out such procedures as distillation, reflux, chromatography (paper, thin layer, column, and gas-liquid), extraction, ion exchange, and spectroscopy (infrared, ultraviolet—vision, and atomic absorption).
Course Hours Per Week: Class 1, M. Lab 18. Quarter Hours Credit 7.
Prerequisites: CHM 116, T-CHM 230

CHM 118—Basic Chemistry
This course has been designed to acquaint the student with some of the basic chemical concepts. Discussions of hazardous materials will be included.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: MAT 121

CHM 150—Industrial Operations
A survey course in which selected examples of process equipment used in the chemical industry are discussed. The students are introduced to and practice calculations necessary in the design and utilization of such equipment.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisites: CHM 116, CHM 230

CHM 224—Water Analysis II
This is a continuance of Water Analysis I as a course in the practical analysis of water with emphasis on marine-oriented techniques and procedures.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: CHM 101

CHM 230—Organic Chemistry I
A survey course in which the nomenclature and properties of organic compounds are introduced. An introduction to infrared spectra is included.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: CHM 115

CHM 231-C—Organic Chemistry II
A continuation of the Organic Chemistry series in which organic reactions and syntheses are discussed and carried out in the laboratory. The students analyze results with such techniques as infrared spectroscopy and gas chromatography.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisites: CHM 230, CHM 117-C

CHM 232-C—Organic Chemistry III
A continuation of the Organic Chemistry series in which the chemistry of carbonyl compounds is stressed. In the laboratory, individual student projects are carried out.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: CHM 231-C

CHM 243—Industrial Analysis I (Qualitative)
A laboratory course in which the students are expected to detect and report the presence of unknown cations and anions in prepared test solutions. (Qualitative Analysis)
Course Hours Per Week: Class 1, M. Lab 9. Quarter Hours Credit 4.
Prerequisite: CHM 117-C

CHM 244—Industrial Analysis II (Quantitative)
A laboratory course in which routine quantitative analyses are carried out. The techniques of gravimetry, titration, electroanalysis, spectroscopy (UV-VIS, AA, AE, colorimetry), chromatography (TLC, GC), and specific ion meters are practiced. Calibrations are stressed, and statistical analyses of results are practiced.
Course Hours Per Week: Class 1, M. Lab 9. Quarter Hours Credit 4.
Prerequisite: CHM 243

CHM 245—Industrial Analysis III (Quantitative)
A course in which the sources, uses, analyses, and treatments of water are discussed. In the laboratory, quantitative analysis, begun in the sixth quarter (CHM 244), is continued with emphasis on water analyses.
Course Hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: CHM 244

CIV 103—Surveying for Construction Trades
Care and use of instruments; theory and practice of plane surveying including taping, differential and profile leveling, transit, stadia, and transit-tape survey will be covered in this course.
Course Hours Per Week: Class 4, Lab 4. Quarter Hours Credit 6
Prerequisite: None

CJC 101—Introduction to Criminal Justice
A general course designed to introduce the student to the historical, philosophical and contemporary views in the criminal justice system. This course also includes a study of the local, state and federal criminal justice agencies, their jurisdiction, organization, purpose, and objective.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 102—Introduction to Criminology
A general course designed to familiarize the student with contemporary and historical theories of criminal behavior. An overview of social factors dealing with criminal behavior will also be examined.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 103—Introduction to Criminal Investigation
A study of the elements of investigation from discovery through presentation in court. The student is introduced to preliminary investigation, collection and preservation of evidence, interviews and interrogation, descriptions of persons and property, sources of information, investigative report writing and case presentation.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 104—Patrol Procedure and Traffic Enforcement
This course is a study of patrol techniques used by law enforcement agencies. Emphasis is placed on motor vehicle laws most frequently violated, traffic accident reports and overall traffic enforcement objectives. Also examined are police operational procedures used in answering calls.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 105—Firearms
A study to help the student develop an understanding of the need, use and respect for all kinds of firearms. Range practice will be given in the use of rifles, shotguns, and pistols with a special effort made to develop proficiency in the use of the service revolver. Instruction will be given in non-lethal weapons such as tear gas, and defensive tactics used in the handling of arrested persons.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: None

CJC 106—Police Instructor Training
This course is designed to prepare individuals to become police instructors. The course includes researching lecture topics and preparing instructional outlines for class presentations. The use of audio-visual aids will also be emphasized.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: ENG 102

CJC 115—Criminal Law
This course is a study of North Carolina substantive criminal law. The elements of criminal laws, legal definitions, and rules of evidence are examined.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

CJC 118—Defensive Tactics
A course designed to provide the student with basic self-defense skills. Instruction will include preliminary exercises to develop balance, movement, and leverage as used in jujitsu.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None

CJC 140—Fingerprint Identification
This course is a survey of the use of fingerprints in criminal investigations. Examination, comparison and classification of fingerprints is included. The Henry System of classification is taught with additional modifications and F.B.I extensions.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None

CJC 141—Handwriting Identification
An introduction to the fundamentals of handwriting identification. An analysis of standard and deviant letters is studied in comparing questioned writings.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 203—Forensic Photography
A survey of the use of photography in criminal investigation is examined in this course. The use of photographic equipment and darkroom procedures are included. Simulated crime scene exhibits are prepared for moot court testimony.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 205—Scientific Evidence
This course examines the admissibility of evidence in a court of law. Emphasis is given to the types of scientific evidence which is within the jurisdiction of the courts.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 208—Arson Investigation
This is a study of the techniques used to investigate arson cases. It includes investigative techniques, crime scene investigation, and laws applicable to unlawful burning.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 210—Criminal Investigation
This course is a study of the fundamentals of criminal investigation. Specific offenses are examined such as: burglary, robbery, homicide, and larceny.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 211—Introduction to Criminalistics
A general survey of the methods and techniques used in modern scientific investigation of crime, with emphasis on the practical use of these methods by the students. Laboratory techniques will be demonstrated and the student will participate in actual use of scientific equipment.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: CJC 210

CJC 214—Pre-Service Law Enforcement Training

This course is designed to provide the student with the skills and knowledge necessary to perform those tasks essential to function in law enforcement. The course consists of 121 hours of instruction in the following topic areas:

(1)	Course Orientation	1Hour
(2)	Laws of Arrest, Search, and Seizure	16 Hours
(3)	Mechanics of Arrest:	
	Arrest Procedures	8 Hours
	Vehicle Stops	6 Hours
	Custody Procedures	2 Hours
	Processing, Fingerprinting, and Photographing Arrestee	4 Hours
(4)	Defensive Tactics	16 Hours
(5)	Firearms	40 Hours
(6)	Law Enforcement Driver Training	16 Hours
(7)	Testing	4 Hours
*(8)	Practice and Review	8 Hours

*Not mandated by Title 12 of the Administrative Code, but is required by Cape Fear Technical Institute.

Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: None

CJC 215—Law Enforcement Probationary Training

This course consists of 264 hours of specific instruction in the following areas:

(1)	Course Orientation	1 Hour
(2)	Constitutional Law	4 Hours
(3)	Law Enforcement Communications and Information Systems	4 Hours
(4)	Elements of Criminal Law	24 Hours
(5)	Juvenile Laws and Procedures	8 Hours
(6)	Emergency Medical Services	24 Hours
(7)	Patrol Techniques	16 Hours
(8)	Crime Prevention Techniques	4 Hours
(9)	Field Notetaking and Report Writing	12 Hours
(10)	Crisis Management	10 Hours
(11)	Deviant Behavior	10 Hours
(12)	Civil Disorders	12 Hours
(13)	Criminal Investigation	28 Hours
(14)	Interviews: Field and In-Custody	8 Hours
(15)	Controlled Substances	6 Hours
(16)	ABC Laws and Procedures	4 Hours
(17)	Electrical and Hazardous Materials Emergencies	6 Hours
(18)	Motor Vehicle Laws	20 Hours
(19)	Techniques of Traffic Law Enforcement	6 Hours
(20)	Preparing for Court and Testifying in Court	12 Hours
(21)	Dealing with Victims and the Public	8 Hours
(22)	Testing and Examination	9 Hours
*(23)	Physical Training	21 Hours
*(24)	Additional Review	5 Hours
*(25)	Additional Testing	2 Hours

*Not mandated by Title 12 of the Administrative Code, but is required by Cape Fear Technical Institute.

Course Hours Per Week: Class 12, Lab 6, M. Lab 3. Quarter Hours Credit 16.
Prerequisite: None

CJC 216—Police Officer Training
This course consists of twenty (20) hours of Traffic Accident Investigation and two (2) hours of physical training. Students who wish to take the State examination for police officer must successfully complete CJC 214, CJC 215, and CJC 216.
Course Hours Per Week: Lab 2. Quarter Hours Credit 1.
Prerequisite: None

CJC 217—Deputy Sheriff Training
The topics in this course consist of the Civil Process and Custody Procedures. Student will receive twenty-four (24) hours of instruction on the Civil Process, eight (8) hours on Custody Procedures, and one (1) hour of physical training. Students who wish to take the State examination for deputy sheriff must successfully complete CJC 214, CJC 215, and CJC 217.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: None

CJC 220—Law Enforcement Organization and Management
Included in this course is an examination of the principles of organizational structure within police agencies. The duties and responsibilities of the police administrative staff will be examined. Recruitment, training, and discipline will be presented as part of the course study.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 221—Law Enforcement Supervision
A course which includes the fundamentals of supervisory procedures. Topics include: leadership characteristics, the decision-making process, evaluation of personnel, and employer - employee relationships.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 222—Crime Scene Investigation
A course which emphasizes collecting physical evidence at the crime scene. Topics included in this course are identification of physical evidence, the care of physical evidence, and the various types of evidence.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

CJC 224—Industrial Security
This course is a general survey of the methods and techniques utilized in theft prevention. Primary emphasis will be placed on alarm systems used in industry.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CJC 240—Firearms Identification
This course is an introduction to the fundamentals of bullet and tool mark comparisons. The comparison microscope is used by the students to examine the bullets and tool marks for individual and class characteristics.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

CON 101—Construction Estimating
This is a basic course in construction estimating. It is designed to acquaint the student with techniques of construction estimating and the use of mensuration tables.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisite: None

DFT 101—Technical Drafting
The field of drafting is introduced. The student learns the elementary practices and principles employed by draftsmen. This knowledge is put to use by reading actual blueprints. Orthographic, pictorial sketching, standards and practices of dimensioning are included for communication from technician to machinist or other artisan.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

DFT 101-C—Technical Drafting
The field of drafting is introduced. The student learns the elementary practices and principles employed by draftsmen. This knowledge is put to use by reading actual blueprints. Orthographic, pictorial sketching, standards, and practices of dimensioning are included for communication from technician to machinist or other artisan. This course covers more material and requires more drawings to be graded than DFT 101.
Course hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: None

DFT 102-C—Technical Drafting
This course covers material from the application of orthographic projection principles to the more complex drafting problems. Primary and secondary auxiliary views, simple and successive revolutions, and all types of sections and conventions will be studied.
Course Hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: DFT 101-C

DFT 103-C—Technical Drafting
This course covers the graphic symbols for electrical and electronic diagrams, use and application of welding symbols, principles and methods of pipe drafting, procedures of drawing and projecting axonometric, oblique, and perspective drawings. Emphasis will be placed on practical application.
Course Hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: DFT 102-C

DFT 104—Blueprint Reading: Mechanical
The interpretation and reading of blueprints, charts, instruction and service manuals, and wiring diagrams are covered. Information on the basic principles of lines, views, dimensioning procedures, and notes will also be included.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

DFT 105—Pipe Drafting I
This course provides explanations of pipe drawings, reference materials, terms, and abbreviations. The American National Standard pipe symbols will be used to construct isometric, orthographic, and schematic pipe drawings.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: Demonstrated Knowledge of Basic Drawings

DFT 114—Pipe Drafting II
This course introduces the student to technical information, data and suggested procedures relating to properties and usage of materials, basic design, and other subjects of interest in the piping field. It will provide the student with reference material on design properties of pipe, flow of fluids, and line expansion and flexibility. Also, basic skills will be provided to the student that are necessary for the solution of the most common problems in fluid flow, pipe-stress analysis, and support for practical application in industrial piping systems.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: DFT 105

DFT 117—Drafting and Blueprint Reading
The field of drafting is introduced. The student learns the elementary practices and principles employed by draftsmen. This knowledge is put to use reading actual blueprints. Orthographic, pictorial sketching, standards and practices of dimensioning are included for communication from technician to machinist or other artisan.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisite: None

DFT 201-F—Technical Drafting and Computer Graphics
Topographical drawing and mapping will be introduced. Plat plans, contours and profiles will be drawn. Use and care of the transit will be studied in the field. Dimensioning practices for "details" and working drawing, as approved by the American Standards Association will also be included. Screws, screw threads, springs, keys, and rivets will also be included in the course of study. Computer graphics will be used to give drafting students a basic working knowledge of hardware and software interaction, and how these basics may be applied to computer graphics in general.
Course Hours Per Week: Class 6, M. Lab 9. Quarter Hours Credit 9.
Prerequisite: DFT 103-C

DFT 205-F—Technical Drafting and Computer Graphics
Basic mechanisms of motion transfer, gears, and cams will be studied and drawn with emphasis on methods of specifying, calculating, dimensions, and delineating. This course covers intersection and developments along with their practical solution. Where applicable, model solutions accompany the problems. Advanced techniques in Computer Aided Drafting (CAD) will also be included. Emphasis will be placed on the integration of a prior knowledge of drafting standards into computer graphic commands.
Course Hours Per Week: Class 6, M. Lab 9. Quarter Hours Credit 9.
Prerequisite: DFT 201-C

DFT 206-F—Design Drafting and Computer Graphics
Research to solve a problem in design will be implemented by consulting various manuals, periodicals, and through laboratory experiments. Preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, and specifications are required as a part of the problem. Computer graphics will be continued with an emphasis on design.
Course Hours Per Week: Class 6, M. Lab 9. Quarter Hours Credit 9.
Prerequisite: DFT 205-F

DFT 208-C—Introduction to Architectural Drafting
The introduction to basic principles of architectural drawings will be studied. Included are drawings, floor plans, elevations, wall sections, details, site plans, electrical plans, plumbing plans, heating plans, and foundation plans. Following this information, the course will introduce model making as a media for study and visualization of architectural and engineering concepts.
Course Hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: DFT 102-C or Instructor's Approval

DMK 163—Fundamentals of Real Estate
This course consists of instruction in fundamental real estate principles and practices, including real estate law, financing, brokerage, closing, valuation, management, and taxation. Also included is instruction on residential building construction, land use, the real estate market and the North Carolina Real Estate License Law and Rules/ Regulations of the North Carolina Real Estate Licensing Board.
Course Hours Per Week: Class 6. Quarter Hours Credit 6.
Prerequisite: None

DMK 164—Real Estate Law
This course consists of advanced level instruction in real property ownership and interests, transfer of title to real property, land use controls, real estate brokerage and the law of agency, real estate contracts, landlord and tenant law, mortgages/deeds of trust, property insurance, federal income taxation of real estate, the N.C. Real Estate License Law, Rules/Regulations of the N.C. Real Estate Licensing Board, and the Licensing Board's "Trust Account Guidelines."
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: DMK 163 or an equivalent course approved by the North Carolina Real Estate Licensing Board

DMK 209—Real Estate Finance
This course consists of advanced level instruction on the major aspects of financing real estate transactions, including sources of mortgage funds, the secondary mortgage market, financing instruments, types of mortgage loans, underwriting mortgage loans, consumer legislation affecting real estate financing, real property valuation, closing real estate sales transactions, and finance mathematics.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: DMK 163 or an equivalent course approved by the North Carolina Real Estate Licensing Board

DMK 271—Real Estate Brokerage Operations
This course consists of basic instruction in the various aspects of real estate brokerage operations, including establishing a brokerage firm, management concepts and practices, personnel and training, marketing operations, records and bookkeeping systems (including trust account bookkeeping), and financial operations.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: DMK 163 or an equivalent course approved by the North Carolina Real Estate Licensing Board

DMK 292—Real Estate Appraisal
A study of the principles and theory of appraising real property. Topics selected include site evaluation, building materials and components, methods of appraising property, and professional organizations.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

DMK 296—Property Management
A study of the nature of property management, types of property, lease preparation, property maintenance and protection of property (Insurance). Other topics include accounting and budgeting in property management, tenant selection, and legal and professional requirements of a property manager.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

ECO 102—Economics I
This course introduces Business, Secretarial and General Office students to the rudiments of economics. The course emphasizes supply and demand analysis, market equilibrium and cost/revenue analysis from the points of view of consumers and the individual firm.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

ECO 104—Economics II
This course extends the basics acquired in Economics I into the economy of an entire country. The course emphasizes national economic measurements, growth cycles and government policies. Economics examines the monetarist and neo-keynesian debates of economic policy.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: ECO 102

ECO 108—Consumer Economics
This course is designed to help the student use his resources of time, energy, and money to get the most out of life. It gives the student an opportunity to build useful skills in buying, managing his finances, increasing his resources, and to understand better the economy in which he/she lives.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDP 100—Computer Literacy
An introductory course designed to give the novice a basic understanding of data processing and information management in todays computer environment. Deals with the currently most used forms of data processing, basic vocabulary tools, and understanding the computer as a part of our society.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

EDP 101—Computer Familiarization
An introductory course designed to give the novice a basic understanding of data processing and information management in todays computer environment. Deals with the currently most used forms of data processing, basic vocabulary tools, and understanding the computer as a part of our society.
Course Hours Per Week: Class 1. Quarter Hours Credit 1.
Prerequisite: None

EDP 104-C—Data Processing Theory
An introductory course designed to introduce the student to the fundamental concepts and operational principles of data processing systems. This course aids the student in developing a basic knowledge of computers, and serves as a prerequisite to the detailed study of particular computer problems.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDP 201—BASIC Language Programming I
This introductory course of programming allows the student to identify and be able to work with an IBM Personal Computer and the processes of developing programs for this computer through the use of flow charts, and the BASIC language. The emphasis is placed on obtaining computational results without developing style of production or theory of programming.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

EDP 202—FORTRAN Language Programming I
This introductory course of programming allows the student to identify and be able to work with an IBM Personal Computer and the processes of developing programs for this computer through the use of flow charts, and the FORTRAN language. The emphasis is placed on obtaining computational results without developing style of production or theory of programming.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: Any other programming language or permission of instructor

EDP 203—FORTRAN 77
This course is designed to develop the student's understanding of FORTRAN 77 programming concepts, coding and structured programming. Both business and engineering math applications will be introduced as a part of program design.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: EDP 202 or EDP 220 and EDP 221

EDP 210—BASIC Language Programming II
This course provides the student who is already proficient in the fundamental techniques of BASIC programming with extended command functions, and advanced operations. Included are internal and external data files, control formatting, multi-dimensional arrays, advanced string variables, subroutines, and an exposure to the Assembler Language.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisites: EDP 201, MAT 122 or Equivalent

EDP 211—Extended BASIC Language Programming
This course is designed to provide a challenging extension of the programming capabilities of those students who have excelled in EDP 201 and EDP 210. Included will be extended commands, statements, functions, extended use of the conditional statements, and error-trapping techniques. The development of single and double precision numbers will be introduced along with various graphic processes. Some work on logical operators will be performed and the merging and chaining of programs will be done.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: EDP 210

EDP 220—COBOL I
This course introduces the student to coding a simple COBOL program which would accept input from at least two sources and display a printed report. The student is also introduced to terminology which will enable him or her to converse with others and understand a technical manual dealing with COBOL. The reading of more complicated COBOL programs will be introduced.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: Any Other Programming Language or Permission of Instructor

EDP 221—COBOL II
This course is designed to develop basic COBOL programming understanding into an intermediate skill level. The student will be able to design and code complex COBOL programs generating reports for business applications.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: EDP 220

EDP 222—COBOL III
This course is designed to develop the COBOL student's understanding of developing applications programs in conjunction with understanding complex COBOL programs with file handling in a DBMS environment.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisites: EDP 220 and EDP 221

EDP 224—RPG II
This course is a study of a report generator language appropriate for use with a small computing system. Students develop program logic and write programs to solve appropriately related sample business problems with special emphasis on application and programming procedures of the smaller business.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisites: EDP 100 and any other programming language or permission of the instructor

EDP 225—Advanced RPG II
This course is designed to develop the RPG II student's understanding of developing applications programs in conjunction with understanding complex RPG II programs with file handling in a business environment.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: EDP 224

EDP 230—PASCAL
This course is designed to introduce students to a disciplined, structured programming language called PASCAL.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: None

EDP 250—BASIC Business Programming
An introductory course in BASIC programming designed for the business student with a knowledge of accounting. The BASIC language is used to program typical business problems. BASIC statements including PRINT, READ, LET, INPUT, GO TO, IF/THEN and FOR/NEXT are introduced and used in programming exercises.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: BUS 120

EDU 205—Teaching Methods
This course is designed to teach the skill necessary in preparing lesson plans and using various methods of instructing other persons.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: None

EDU 231—Creative Activities
Individual and group exploration of activities and media for promoting optimal self-expression, aesthetic appreciation, and creativity in young children.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDU 233—Nutrition
The study of basic nutrition, with emphasis on methods of helping young children and their families learn nutritional concepts for more healthful living.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

ELC 107-A—Electricity I
This course is an introduction to basic theories and principles of electricity. Basic electrical units, Ohm's Law, symbols, power sources and electrical measuring instruments in coordination with basic D.C. series and parallel resistive circuits will be covered. Practical applications will be stressed. This course is not transferable to the Electronics or Instrumentation Technology curriculums.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

ELC 107-F—Electricity I
This fundamental course is an introduction to basic theories and principles of electricity. It includes electrical symbols, electrostatics, Ohm's Law, direct current (DC) circuits, power, power sources (DC), circuit theorems, electrical measuring devices, and an introduction to electromagnetism, capacitance and inductance. Practical applications are highly stressed.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Pre/Corequisite: MAT 121

ELC 108-A—Electricity II
This course is a continuation of ELC 107-A. It will cover an introduction to magnetism, inductance, alternating current, theory, capacitance, reactance phase relationship, AC power and transformers, generators, alternators, and distribution system. Voltage and current regulation along with practical applications will be stressed. This course is not transferable to the Electronics or Instrumentation Technology curriculums.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: ELC 107-F or ELC 107-C plus Proficiency Test

ELC 108-F—Electricity II
The continuation of ELC 107-F. This course is an introduction to alternating current theory, sine wave analysis, inductive, capacitive, reactance, phase relationships, AC power, and transformers. Simple generators and distribution systems are studied. Practical applications are highly stressed.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisite: ELC 107-F
Pre/Corequisite: MAT 122

ELC 109-F—Electricity III
This course is a continuation of ELC 108-F. Topics studied will include RLC circuits, resonance and filters. The practical applications of these concepts are highly stressed.
Course Hours Per week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisite: ELC 108-F
Pre/Corequisite: MAT 123

ELN 101—Electronic Project
This is a basic course to introduce electronic circuits and wiring practices. Soldering/desoldering techniques, chassis layout, schematic interpretation, hand tools, and manipulative skills involving hand tools applicable to electronics and instrumentation will also be covered.
Course Hours Per Week: Lab 2. Quarter Hours Credit 1.
Prerequisite: None

ELN 106—Electronics I
This fundamental course covers soldering techniques, symbols, schematic diagrams, and the functional application of test equipment as used by technicians in electronic-intensive fields. It further introduces the student to the basics of semiconductor physics and two-terminal devices.
Course Hours Per Week: Class 2, M. Lab 6. Quarter Hours Credit 4.
Pre/Corequisites: ELC 107-F, MAT 121

ELN 107—Electronics II
A continuation of ELN 106. Theory and applications of two-terminal devices, Bipolar junction transistor (BJT) circuits, to include biasing methods, small-signal analysis, interstage coupling and feedback.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisite: ELN 106
Pre/Corequisites: ELC 108-F, MAT 122

ELN 108—Electronics III
This course is a continuation of T-ELN 107. Topics covered are power supplies and regulators, theory and application of the Junction and Mos field effect transistors (FET) including circuits, biasing and small-signal analysis. Multistage circuitry, power amplifiers and feedback (including oscillators and multivibrators) using BJT's, FET's and two-terminal devices are also covered in this course.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisite: ELN 107
Pre/Corequisites: ELC 109-F, MAT 123

ELN 109—Electronics IV
This course is a continuation of ELN 108. Theory and applications of unijunction and of special multijunction switching devices including linear integrated circuits (LIC) will be studied. Operational amplifiers and optoelectronics, combinational circuit applications using LIC's, BJT's, FET's, thyristors and opto-devices are also studied.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisites: ELC 109-F, ELN 108, MAT 123

ELN 110—Introduction to Digital Electronics
This course deals with Boolean Algebra as applied to digital logic and control devices. The laws and principles of Boolean Algebra will be studied in detail. Kavnaugh mapping and the binary number system will be examined.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: ELN 108

ELN 140—Introduction to Marine Electronics
This course is a continuation of ELC 108-A emphasizing marine related applications. The course of study includes an introduction to radar, sonar, communications, sound and electromagnetic wave propagation. Common types of equipment, circuits, testing and measuring devices are studied. In all areas of study, practical applications are stressed.
Course Hours Per WeeK: Class 4, Lab 2. Quarter Hours Credit 5.
Prerequisite: ELC 108-A

ELN 202—Communication Electronics
This course will present basic laws, regulations and operating procedures governing communications in the United States. An in-depth study of solid state device applications in various communication circuits will be conducted. Theory of and special uses for vacuum tubes will be presented.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: ELN 109

ELN 210—Electronics
This course introduces the student to the basics of semiconductor physics and two-terminal devices. Theory and applications of the Bipolar Junction Transistor (BLT) Circuits, including biasing methods, small-signal analysis, interstage coupling, and feedback will be studied.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

ELN 220—Electronic Systems
This is a block diagram course covering concepts of numerous electronic systems. Modules or blocks of various circuits, already studied, are arranged in various manners to produce complex electronic systems. Each system will be explained and reduced to functions and then to block diagrams. AM, FM and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated systems, telemetry, navigational systems, sonar and radar will be considered.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisite: ELN 202

ELN 224—Measurement and Control I
This course offers a familiarization of instruments utilized in industrial applications. Theory and applications of pressure gauges, vacuum gauges, manometers, dead weight testers and current calibrators will be studied. Associated hardware and software as applied in industrial applications will also be presented.
Course Hours Per Week: Class 2, M. Lab 9. Quarter Hours Credit 5.
Prerequisites: ELN 109, ELN 110, PHY 102

ELN 225—Measurement and Control II
This course is a study of control theory utilizing electronic and pneumatic instruments. Control loops, selectronic and pneumatic, will be studied, constructed, and calibrated for actual "in-service" conditions.
Course Hours Per Week: Class 2, M. Lab 9. Quarter Hours Credit 5.
Prerequisite: ELN 224

ELN 226-C—Measurement and Control III
This course is a continuation of T-ELN 225, Measurement and Control II. Emphasis will be placed on current techniques in industrial instrumentation, instrument installations and environmental conditions affecting industrial applications of automated systems. Environmental control utilizing electronic and pneumatic systems will be studied.
Course Hours Per Week: Class 2, M. Lab 9. Quarter Hours Credit 5.
Prerequisite: ELN 225

ELN 229—Electronic Project
This course will introduce wiring and trouble-shooting techniques to the student. The student will practice wiring and testing basic circuits used in electronic equipment. Project selection will be approved by the instructor.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisites: ELN 109, ELC 109-F

ELN 230—Electronic Project
This course is a continuation of ELN 229 and will consist of the study of wiring and testing more complex circuits used in electronic equipment. This course develops advanced wiring and trouble-shooting techniques. Project selection will be approved by the instructor.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: ELN 229

ELN 231—Electronic Project
This course is a continuation of ELN 230 and will consist of wiring and testing functional electronic equipment. This course also develops advanced trouble-shooting techniques. Project selection will be approved by the instructor.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: ELN 230

ELN 236—Industrial Field Trips
This course will consist of field trips to local industries and lectures by instrument technicians and engineers who work with the company.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisites: ELN 109, ELN 110

ELN 238—Antenna and Transmission Line Theory
This course is a study of antenna and transmission line theory. Methods of transferring radio frequency energy from its source to the antenna, antenna theory and radio wave propagation characteristics will be studied.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: ELN 202

ELN 240—Computer Project (Digital)
This course is designed to provide the student with digital design techniques from concept through construction. Each project selection to be approved by the instructor.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisites: ELN 109, ELN 110

ELN 241—Digital Principles and Applications
Basic computer and static control logic circuits will be studied. Discreet components will be used to construct logic circuits and investigate voltage levels, propagation delays and switching speed. Boolean principles relating to each type gate will be investigated.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisites: ELN 109, ELN 110

ELN 243—Computer Electronics
A study of nondigital electronic circuits directly related to digital computer applications. Video amplifiers, low voltage and high voltage power supplies, deflection circuits and data transmission systems will be introduced.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: ELN 109

ELN 244—Computer Project (Microprocessor)
This course is a continuation of ELN 240. This project will be oriented toward microprocessor application.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: ELN 240

ELN 245—Peripheral Devices
This course is an introduction to the theory of operation of digital computer peripheral devices such as printers, plotters, and disk drives. Particular attention will be given to maintenance and preventive maintenance procedures.
Course Hours Per Week: Class 1, M. Lab 6. Quarter Hours Credit 3.
Prerequisite: ELN 243

ELN 247—Computer Project (Microcomputer)
This course is a continuation of ELN 244. This project will be oriented toward microcomputer application.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: ELN 244

ELN 249—Computer Interfacing
This course is designed to present digital computer applications. Topics to be introduced include display multiplexing, I/O control and handshaking, peripheral interface adapter (PIE), analog to digital conversion and digital to analog interfacing.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: ELN 251

ELN 250—Introduction to Microprocessors
This course is designed to present the general concepts of microprocessor organization and structure to the student. Machine coding will be introduced.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: ELN 110
Corequisite: ELN 241

ELN 251—Microprocessors I
An in-depth study of integrated circuit logic devices used in microprocessor applications will be conducted. This study will include logic gates, memory devices, arithmetic logic units and input/output ports.
Course Hours Per Week: Class 2, M. Lab 6. Quarter Hours Credit 4.
Prerequisite: ELN 241

ELN 252—Microprocessors II
This course will be a continuation of ELN 251. Logic concepts previously studied will be used in an in-depth investigation of various microprocessors. Current uses of microprocessors in industrial applications will be presented. Concepts of both Machine and Assembly Languages will be presented.
Course Hours Per Week: Class 2, M. Lab 6. Quarter Hours Credit 4.
Prerequisite: ELN 251

ELN 255—Computer Systems
A study of computer architecture and the operating system giving consideration to the general organization of the computer. Particular attention will be given to trouble-shooting procedures used to analyze and facilitate the repair of digital computers. Diagnostic trouble-shooting utilizing hardware and software will be introduced.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisites: ELN 245, ELN 251

ENG 101—Grammar
The course is designed to aid the student in the improvement of grammatical self-expression. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. It is intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

ENG 101-S—Grammar
This course will cover the same areas and carry the same credit as ENG 101. An additional one hour of lab time has been scheduled and class size reduced in order to provide special and individualized instruction to upgrade the skills of those students who recognize a need for additional help.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

ENG 101-C—Grammar and Composition
This course is designed to aid the student in the improvement of grammatical self-expression. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. It is intended to stimulate students to apply the basic principles of English grammar in their day-to-day situations in industry and social life.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

T-ENG 101-CS—Grammar
This course will cover the same areas and carry the same credit as ENG 101-C. An additional one hour of lab time has been scheduled and class size reduced in order to provide special and individualized instruction to upgrade the skills of those students who recognize a need for additional help.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: None

ENG 102—Composition
This course is designed to help students improve dictionary skills and implement grammar skills learned during ENG 101. Practice is given in writing sentences, paragraphs, and compositions of one to five paragraphs. Emphasis is placed on topic sentences, paragraph development techniques, exposition and argumentation, transitions and conclusions. Students will also work on proofreading and rewriting skills.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: ENG 101

ENG 102-C—Grammar and Composition
This course advances the student from ENG 101-C's basic mastery of word and sentence skills to include more advanced forms of grammar and usage in their application to written language. More advanced study, such as the uses of subordination, dictionary skills, and the use of the library to its fullest, is included. The course culminates in the writing of a research paper.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: ENG 101-C

ENG 103—Report Writing
The fundamentals of English grammar and composition skills learned in ENG 102 are utilized as background for modern report writing. Typical reports using writing techniques and graphic devices are studied and written. Letters of application and resumes are prepared. In addition to using writing and dictionary skills, attention is given to acquainting the student with library materials needed for research. A full-length report is required of each student. The report should relate to the student's specific curriculum or other related topics approved by the instructor.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: ENG 102

ENG 104—Reading and Composition
English 104 is designed to advance the student's compositional skills through the reaction in writing to various reading materials. The course covers finding main ideas and thesis. It devotes attention to reading a variety of materials such as textbooks, newspapers, and imaginative literature. It includes sections on critical reading, telling fact from opinion, generalizing, drawing inferences, and recognizing bias. It concludes with the application of critical skills, reading skills, and study of figurative language to the reading of poems, short stories, and a novel.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: ENG 102 or ENG 102-C

ENG 204—Oral Communication
This course considers the basic concepts and principles of oral communication in order to help the student improve his speech communication skills. Emphasis is placed on thought organization, listening, audience analysis, visual and audio visual aids, voice diction, pronunciation, projection, and attitude on the application of techniques to improve speech habits and mannerisms, and on the production of poised, confident, effective oral presentations.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

ENG 206—Business Communication
This course develops skills in techniques of writing a broad spectrum of business communications, emphasizing the improvement of both form and content.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: ENG 102-C

FST 106-C—Nuclear Radiation Monitoring
This course is designed to provide a basic understanding of radiation and its biological effects; radiation detection procedures and instruments; protective measures; the dangers of transportation accidents involving radioactive materials; and the nuclide disintegration process.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: CHM 114 or Equivalent

GEO 101—Marine Geology
A study of major topographical features of the ocean floor will be undertaken in this course. Included will be coverage of continental drift, sea floor spreading, plate tectonics, seismology, sedimentation, paleontology, mineralogy and petrology as these pertain to the ocean.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

GEO 102—Geology of the Oceans
This is an introductory course in marine geology. Recent discoveries concerning the ocean floor are discussed in this lecture course. Modern theories of plate tectonics and sea floor spreading are presented by lecture and film. Sediment samples, rocks and minerals collected on recent C.F.T.I. cruises are shown and discussed as they relate to the modern concepts of marine geology.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None

HEA 109—Medical Ethics, Law and Economics
This course is designed to acquaint the student with the legal aspects of medical practice acts; the relationship of physician, patient, and professional liabilities; and types of medical practice. Basic principles of medical economics are included.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

HEA 110—Clinical Practice
This is a course designed to give the student an overview of the medical assistant's duties at the clinical level. Topics covered will include pharmacology, medical instruments, assisting with physical therapy, and minor surgery.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

HED 120—First Aid
This course will introduce the student to basic first aid and enable him or her to successfully cope with the everyday injuries that might occur. Course coverage will range from minor cuts and burns to artificial respiration and the treatment of shock.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

HED 121—First Aid and Marine Safety
This course will introduce the student to first aid which will enable him or her to successfully cope with the everyday injuries and accidents that may occur in a marine environment. Prevention of these accidents will be discussed and stressed. Students will be taught the safety rules utilized on board a vessel as well as at shore stations near the water.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

INS 214—Introduction to Insurance
This course is designed to give the prospective insurance salesperson an overview of the insurance business. Topics covered in this course include the history of insurance, introduction to risk, the field of insurance, and insurance law. This course is approved by the North Carolina Department of Insurance for licensing.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

INS 215—Life, Accident and Health Insurance
This course is designed to give the prospective insurance salesperson training in the field of life, accident, and health insurance. This course includes a study of life insurance from the following points of view - life exposure, types of life insurance, and life policy provisions. Health insurance will be discussed on the following points: health exposure, types of health insurance, and health policy provisions. Social insurance topics will cover social security, unemployment compensation, and disability insurance. This course is approved by the North Carolina Department of Insurance for licensing.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: INS 214

INS 216—Fire and Casualty Insurance
This course is designed to give the prospective insurance salesperson an understanding of fire and casualty insurance. This course includes a study of property insurance, types of automobile insurance, general liability, commercial fire, homeowners, crime insurance, and government fire and casualty insurance. This course is approved by the North Carolina Department of Insurance for licensing.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: INS 214

ISC 113—Industrial Safety
This course presents fundamental safety philosophy and stresses applications to situations encountered routinely by industrial plant mechanics. The topics to be covered are entering piping systems, routine electrical maintenance, electrical hot work, and electrical test equipment. The student will learn to use safe methods and procedures for accomplishing them.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

LEG 101—Introduction to Paralegalism
This course covers the objectives of the paralegal program, the legal vocabulary, the description of various paralegal jobs, professional ethics, and professional organizations.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

LEG 113—Family Law
The purpose of this course is to train paralegals to handle competently separations, divorces, annulments, adoptions, and bastardy proceedings from initial interview through data collection and drafting of instruments, giving notice, filing and serving documents, and setting hearing dates to final disposition.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: LEG 115 or BUS 115-C

LEG 115—Commercial Law I
An introduction course for those majoring in the Paralegal curriculum. The course will involve an introduction to the law, a discussion of the law of contracts: personal property and bailment; and agency and employment. The course will include hands-on experience in drafting of contracts.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

LEG 116—Commercial Law II
A continuation from Commercial Law I for Paralegals with emphasis on the Univorm Commercial Code and business organizations. The course will include exposure to commercial instruments and drafting business documents.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: LEG 115 or BUS 115-C

LEG 117—Torts and Litigation Preparation
This course considers the broad problem of personal injury and disability and the legal response to that law. Negligence, strict liability, intentional torts, rules of civil procedure preparation, pleadings, motions, order, discovery materials and post-judgement remedies are covered in great detail.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: LEG 135

LEG 132—Legal Research/Bibliography
This course introduces the student to the proper methods of utilizing legal research material. The student will study the preparation of legal memoranda and trial briefs. The course will introduce the student to the law library and how to select and order material for the library.
Course Hours Per Week: Class 4, Lab 6. Quarter Hours Credit 7.
Prerequisite: LEG 115 or BUS 115-C

LEG 135—Legal Systems
This course is a study of the jurisdiction of State and Federal courts; the acquisition of jurisdiction over parties and subject matter; venue; pleadings and related problems under the North Carolina and Federal Civil Rules of Procedure; real party in interest; splittings of actions; joinder of parties and causes of action; special joinder devices; and forms of pleadings and motions.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

LEG 205—Constitutional Law (Federal)
A case study course showing the development of the application of the Federal Constitution to both criminal and civil law and a historic development of Constitutional Law.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: LEG 132

LEG 208—Administrative Law
This course involves study of various administrative agencies and procedures, including Social Security, Social Services, Veterans Administration, Industrial Commission, and Employment Security Commission.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: LEG 132

LEG 214—Property I
This course is a study in ownership of interest in land, of land transfers, in whole and in part, absolute and conditional, present and future; of retained powers of ownership; and of the documents and procedures necessary to establish interest in land.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: LEG 115 or BUS 115-C

LEG 215—Property II: Title Search
This course includes the study of the preparation of simple contracts for sale of real estate; ordering title search; examination of title; preparing simple titles; ordering title insurance; preparation of deeds, bonds, notes, mortgages, and affidavits of title; preparation of settlement sheets and role of judgements and estates in the determination of marketability of real estate title; the study and function of various documents, indices and files on public records in various county offices. Forms for abstracting title information from public records, summaries thereof, and various typical problems and errors which may render a title unmarketable are included.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: LEG 214

LEG 217—Elements of Criminal Law and Procedure
This is a study of the elements of crimes in North Carolina, of criminalization and punishment, of parties to crimes, and of defenses to crimes. Criminal procedure is examined and a case's progress through the courts traced.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: BUS 115-C

LEG 219—Computerized Legal Research
This course is designed to instruct the student in the use of computer research in the law office. The course will focus on the two primary legal resources, LEXIS and WESTLAW, and instruct the student in the efficient use of these systems.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

LEG 224—Wills
This course covers the probate and administration of wills. The topics of study include the operation and revocation of wills, descent and distribution in case of intestacy, construction of trust agreements, and the transfer of estate assets.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

LEG 225—Law Office Management
This course is an introduction to the practice of law. The student will study the way the law office is organized and the reason for the organization. The topics of study include timekeeping, client file, bookkeeping, supervision of personnel, and professional responsibilities.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

LEG 230—Bankruptcy and Collection
This course will introduce the student to the Bankruptcy Law. The student will understand the operation of the bankruptcy court and will be exposed to the techniques of debt collection and attachment.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: LEG 117

LEG 290—Paralegal Internship
This course is offered in the final quarter of the Paralegal Technology curriculum and is designed as a co-op.
Course Hours Per Week: Co-op Hours 20. Quarter Hours Credit 2.
Prerequisite: Completion of 30 Quarter Hours of LEG Courses

LEG 291—Paralegal Office Procedures
A guided class discussion of legal principles of office procedures and relating of the same to everyday experiences.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: Completion of 30 Quarter Hours of LEG Courses

MAT 090—Pre-admission Algebra
Fundamentals of Algebra I designed to prepare the applicant who has not taken algebra in high school for a smooth transition into the technical mathematics sequence at Cape Fear Technical Institute. Topics include arithmetic review, signed numbers, algebraic expressions, and simple linear equations.
Course Weeks: 6
Course Hours Per Week: Class 7.5. Quarter Hours Credit: 4.
Prerequisite: None

MAT 101—Technical Mathematics
The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: High School Algebra and Geometry

MAT 102—Technical Mathematics
A continuation of MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, determinants, progressions, and binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions are studied in depth.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 101

MAT 103—Technical Mathematics
The fundamental concepts of analytical geometry, differential, and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivatives, differentials, rate of change, integrals and basic integration techniques. Application of these concepts to practical situations is stressed.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 102 or MAT 123

MAT 110—Business Mathematics
The fundamental mathematical operations and their application to business problems. Topics covered include the fundamentals of problem-solving, computing with whole numbers and decimals, common and complex fractions, percentage, and interest.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

MAT 121—Technical Mathematics
This introductory algebra course is the first in a three course sequence. The topics of study are operations with real numbers, introduction to exponents and radicals, operations with algebraic expressions, algebraic fractions, and solving first order equations.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

MAT 121-S—Technical Mathematics
This introductory algebra course will cover the same areas and carry the same credit hours as MAT 121. An additional two hours of lab time has been scheduled and class size reduced in order to provide special and individualized instruction to upgrade the skills of those students who recognize a need for additional help.
Course Hours Per Week: Class 3, Lab 4. Quarter Hours Credit 5.
Prerequisite: None

MAT 122—Technical Mathematics
This course is the second in a three-course sequence. The topics of study are variation, graphing of functions, trigonometry of the right triangle, vectors, systems of equations, exponents and radicals, and exponential and logarithmic functions. Application of theses topics in technical areas of study will be stressed.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 121 or Equivalent

MAT 123—Technical Mathematics
This course is the third in a three-course sequence. The topics of study are quadratic equations, trigonometric graphs and polar coordinates, trigonometric formulas and equations, and solving oblique triangles.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: T-MAT 122 or Equivalent

MAT 130—Advanced Business Mathematics
This course is a study of pertinent uses of mathematics in the field of business. The topics covered include payrolls, price marking, depreciation, distribution of profits, compound interest, and amortization.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 110

MAT 131—Applied Math for Chemistry I
This introductory course in chemical arithmetic is the first in a two-course sequence. The topics of study include fractions, ratios, percents, powers, and scientific notation. It is a lecture-lab course in which students, under supervision, will work problems related to their major field of study, Chemical Technology.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

MAT 132—Applied Math for Chemistry II
This course is a continuation of T-MAT 131. Topics of study include ratio and proportion, logarithms, simple algebraic equations, and physical property calculations.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisites: MAT 121, MAT 131

MAT 201—Technical Mathematics
In this continuation of T-MAT 103, more advanced concepts of differentiation and integration are considered. Included are graphs and derivatives of the trigonometric functions, exponential and logarithmic differentiation and integration, advanced integration techniques, polar equations, parametric equations and Fourier series.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 103

MAT 211—Basic Statistics
This introductory course of statistics allows the student to identify and be able to work with statistical descriptions, probability, random variables and probability distributions, special distributions, sampling distributions, estimations of population proportion, test concerning population proportions, inferences concerning population mean and additional topics selected from the following: inferences concerning differences of two population means, inferences concerning population variances, Chi-square, regression and correlation, analysis of variance, nonparametric methods, survey sampling, quality control, Bayesian methods, and decision theory.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 122

MEC 107—Process Instrumentation
This is a lecture course to introduce the student to the theory and operational principles of industrial process instruments.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

MEC 111—Industrial Mechanics I
Major areas covered by this course are tools, fasteners, and engineering drawings. Proper care and use of hand tools, power tools, and precision measuring tools are stressed with special emphasis on hand safety and tool hazards. Reading and interpretation of engineering drawings and sketches are a vital part of this course. Instruction in the selection and installation of fasteners is also important in establishing a broad base of mechanical knowledge.
Course Hours Per Week: Class 5, Lab 2. Quarter Hours Credit 6.
Prerequisite: None

MEC 112—Industrial Mechanics II
This diversified course covers many aspects of an individual mechanic's job: rigging, equipment alignment, and bearings. Geometric relationships and basic math are essential parts of this course. Lubrication types and methods of application are included in the study of bearings. A practical approach to rigging is used to teach students how to move heavy equipment with a variety of slings, hoists, and jacks.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: MEC 111

MEC 115—Industrial Pipefitting I
This course is an introduction to pipefitting with emphasis on fabrication and installation of threaded pipe. Topics covered are piping materials and tools, threaded pipe fabrication and installation, conduit fabrication and installation, gaskets and packing. Proper use of hand and power tools will be practiced during all phases of this course. Students will fabricate different pipe and conduit sections based on their own field measurements.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: None

MEC 116—Industrial Pipefitting II
This course will teach the industrial mechanic to maintain and repair existing piping systems. The mechanic must be able to identify defective parts of a pipe system, choose suitable replacement parts, shut down the energized system, and repair it. These systems could be flanged, threaded, or soldered. A working knowledge of system components such as valves, traps, strainers, filters, and relief valves will be achieved.
Course Hours Per Week: Class 4, Lab 2. Quarter Hours Credit 5.
Prerequisite: MEC 115

MEC 118—Introduction to Manufacturing Engineeering
This course is designed to give the student an understanding of the basic sciences and techniques used in industrial manufacturing engineering. It includes coverage of basic parts design, materials application to the part and systems engineering or processes used to make the parts. It stresses the interaction of all three to produce the part at an optimum cost.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None

MEC 120—Industrial Methods
This course is designed to familiarize students with lathe and milling operations used in the production of machine parts. Lab work is performed on aluminum or plastic stock with an emphasis on how parts are formed.
Course Hours Per Week: Class 1, Lab 4. Quarter Hours Credit 3.
Prerequisite: None

MEC 205—Strength of Materials
This course is a continuation of PHY 106-C, Applied Mechanics. It is the study of stress and strain as they relate to structural design. The areas of force analysis of structures, friction, equilibrium, stress, and strain are covered in as much detail as time will permit.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisites: MAT 123, PHY 106-C

MEC 209-C—Introduction to Metallurgy
This is an introductory course which will describe the properties of ferrous and non-ferrous metals as they apply to industrial applications. Metallurgical theory and practice will be studied to include the physical structure and composition of steel, the making, shaping, and treatment of steel and alloy steel as well as alloys of the common non-ferrous metals to include light metals, copper, nickel, and the refractory metals.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

MEC 215—Metallurgy
This course will introduce the student to the terminology describing the physical, mechanical, and chemical properties and behavior of the ferrous and non-ferrous metals and their alloys. Metallurgical theory and its application to the design, selection and processing of metals and alloys for industrial applications will be topics for study.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: CHM 243

MEC 216—Industrial Materials
Proper knowledge of all types of industrial materials is essential to successful decision-making and problem-solving. This introductory course investigates the basic materials in industry. Electrical and physical properties of materials, mechanical characteristics of materials, water and steam, industrial gases, ceramic materials, cements and concretes, and metals are studied.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Corequisite: MAT 122 or Equivalent

MEC 235-C—Hydraulics and Pneumatics
In this course the student will learn the basic ideas of hydraulic and pneumatic systems. In so doing the student will develop an understanding of various hydraulic and pneumatic controls and their relationships and function in circuits. Symbols and conventional practices will be stressed.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisite: PHY 102 or PHY 105

MEC 240—Radiographic Testing
A survey of the principles governing the radiographic testing process and the types of parts commonly inspected with radiation; routine procedures used in accomplishing the test, understanding the requirement for a specific technique, and safety precautions pertinent to radiation hazards will be stressed.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None

MEC 246—NDT Surface Testing, Magnetic Particle and Liquid Penetrant
This is a survey of the liquid penetrant process used in manufacturing, inspection, and testing procedures. An introduction to the principles governing the magnetic particle testing and inspection process, it identifies types of parts which are commonly tested by magnetic lines of force, and explores advantages and disadvantages of surface and subsurface indications.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None (General High School Level Education or Industrial Training Desirable)

MEC 248—Ultrasonic Testing
In this course the principles of ultrasonic testing and inspection process cover the type of parts commonly tested with ultrasonsics. Procedures for specific tests, and the advantages and disadvantages will be studied.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None (General High School Level Education or Industrial Training Desirable)

MET 101—Introduction to Meteorology
This course is an introductory study of the composition and structure of the earth's atmosphere and the physical forces that influence weather. Included is the identification and interpretation of observed weather phenomena.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

MGT 104—The Art of Motivating People
An overview of the theories and principles dealing with motivation in terms of self and group activity. Class participation is used to bridge the gap between thearitical and actual experience for motivation processes.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

MGT 105—Human Relations and Communications
A study in the basic principles of human behavior in terms of yourself, working with others, and your career as related to situations, and as related to the academic discussions.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

MSC 101—Navigation I
This course introduces students to basic marine piloting techniques using charts, navigational aids, buoys, markers, rules of the road, light and signals.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

MSC 102—Navigation II
This is a continuation of MSC 101 introducing students to navigational publications and electronic navigational aids. Proper use of electronic equipment; (radar, radio direction finding, loran, sonic echo ranging and recording, and the gyrocompass) will be stressed. Classroom instruction in tides, tidal current effects, danger angles, and soundings will also be covered as time permits.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: MSC 101

MSC 108—Oceanographic Instrumentation
Oceanographic Instrumentation will be introduced via lecture, demonstration, and student operation. Emphasis will be placed on use, maintenance and repair of routine survey instruments.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

MSC 109—Oceanography I
This course is a general description of the oceans, their geography, geology, chemistry, and physics. A survey of terminology and techniques used by scientists in studying the oceans will be included.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

MSC 110—Oceanography II
This course is a continuation of MSC 109. Various aspects of waves, currents, tides, and coastal oceanography are covered.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

MSC 111—Net Construction Methods
This course will introduce the students to all types of fish-catching methods available to the commercial and scientific fisherman. Students will be instructed to the basic aspects of rigging, rope splicing, various practical knots, and the kinds of hardware used in biological sampling operations. The basics of biological net construction and repair also will be covered.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MSC 112—Biological Net Construction I
This course will offer the student further instruction and practical experience in the mending and patching of various types of gear as well as additional experience in various aspects of marlinspike seamanship. Students will receive instruction on the various types of webbing available as well as construction techniques for various types of entrapment and entanglement gear. Ordering, sizing, and practical applications of all gear constructed will be explained.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: MSC 111

MSC 113—Biological Net Construction II
This course will offer the student further instruction in the design and construction of some of the more complex sampling gear, including biological seines, trawls, and cast nets. Taper cuts and sewing techniques will be introduced as well as computer-assisted design of various equipment. Practical applications of all gear constructed will be explained.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: MSC 112

MSC 114—Biological Sampling Methods
This course will offer the student further experience utilizing all the various skills and techniques taught in the prerequisite courses. This course will also include the proper care and maintenance of all equipment used, the proper recording of all biological data as well as theories and uses involved in the compilation of raw biological data.
Course Hours Per Week: Lab 4. Quarter Hours Credit 2.
Prerequisite: MSC 113

MSC 115—Construction of Gill Nets
This course is designed to teach the basic construction of gill nets used for fishing.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MSC 117—Practical Experience I
This course will offer the student an introduction to various measuring devices and their uses, various hand and hand power tools and their uses, as well as experience in the basic design, construction, and maintenance of marine related materials.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None

MSC 118—Practical Experience II
This course will introduce the student to various stationary power tools and their uses. Further experience will be gained with the use of hand and portable power tools, as well as the basic design, construction, and maintenance of marine-related equipment.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: MSC 117

MSC 119—Practical Experience III
This course is designed to offer the student practical experience in the photographic recording of data as it relates to past biological, chemical, and instrumentation studies. Further experience is also offered in the utilization of various construction projects.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: PHO 110

MSC 129—Power Boat Handling
This course introduces students to the various aspects of safe, skillful, and seamanlike operation of power boats. Emphasis is placed on nautical terminology, boat nomenclature, and boating equipment. Students will launch, operate, recover, and trailer small craft in this course.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MSC 130—Seamanship
An introduction to the skills, duties, and nomenclature required of an able bodied seaman will be covered in this lecture course.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

MSC 202—Data Processing I
This course introduces the student to the handling of oceanographic data. Temperature and salinity data are used to demonstrate standard methods of sequentially recording and reducing oceanographic data.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: MAT 123

MSC 204—Environmental Measurements
A course in which emphasis is placed on field sampling and measurements, laboratory analysis, data reduction, and data representation, this is designed to provide an opportunity for soon-to-be-graduating students to apply in a comprehensive, challenging, and significant manner what has been learned during the past seven quarters. A formal report will be required.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisites: CHM 109, CHM 224, MSC 108

MSC 205—Data Processing II
This course is a continuation of MSC 202 and will emphasize computer application in the collection, handling, reduction, and display of oceanographic temperature and salinity data for dynamic purposes.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisites: EDP 201, MSC 202

MSC 218—Eddy Current Testing
Principles of eddy current testing and inspection processes will be covered. Emphasis will be placed on routine procedures involved; selection of a specific technique; limitations, advantages, and disadvantages of this test; and interpreting frequency meter indication.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

MSC 220—Practical Experience IV
This course will be offered to provide practical experience in trade and technical marine fields specifically related to the needs of graduates based on continuing surveys of marine industry.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None

PHO 110—Introduction to Photography
This course will introduce the basic skills of black and white photography. The workings of the camera will be explained. What makes a good photograph and how to take a good photograph will be covered. Instruction will also be given on how to process film, to make good prints, and to prepare photographs for display.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

PHO 200—Intermediate Photography
This course will expand upon the applications of black and white photography. Exposure control and film characteristics will be stressed as well as Archival Processing and storing of negatives and prints. Artificial as well as natural lighting techniques will be discussed.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: PHO 110

PHO 210—Advanced Photography
This course will broaden the field of black and white photography. Special techniques and effects will be discussed. Special fields of technical photography such as micro, macro, and artificial lighting will be covered. Also, color slide preparation and presentation will be introduced.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: PHO 110

PHY 100—Introductory Physics
This fundamental course forms the prerequisite for PHY 103, PHY 104-C, PHY 105, or PHY 106-C. The student is introduced to the units used in measurements, and to the following concepts applied to linear motion: force, work, and power. Emphasis is placed on the universal applicability of these concepts to other more specialized programs of study.
Course Hours Per Week: Class 4, Lab 2. Quarter Hours Credit 5.
Prerequisite: It is recommended that MAT 121 be taken prior to enrolling in this course or to be taken concurrently with this course.

PHY 101—Physics: Properties of Matter
This is an introductory course which describes some basic physical properties of matter in the solid, liquid, and gaseous states. Topics discussed are: units of measurement and unit conversions, density and hydrostatic pressure in liquids, surface tension, Hooke's law and the elasticity of solids and liquids, heat and temperature measurement, and the ideal gas law.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: MAT 121

PHY 102—Physics: Work, Energy and Power
This course is the second introductory course and is designed to follow PHY 101. Topics discussed are: velocity and acceleration of objects, Newton's laws of motion, vector calculations, work , energy, power, and rotary motion.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisites: PHY 101, MAT 121
Pre/Corequsite: MAT 122

PHY 103—Physics: Electricity
This course is an introduction to the physical principles of electrical phenomena. Topics discussed include: electrostatics, electric current flow and Ohm's law, magnetism and forces caused by electric currents, induced electric currents, alternating current devices, and simple electronic DC power supply circuits.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisites: MAT 122, PHY 100 or PHY 101

PHY 104-C—Physics: Light and Sound
This course is an introduction to the description of optical and acoustic devices. Topics included are: wave motion and resonance, sound measurements and human hearing, the Doppler effect, illumination and color, optical elements (lenses and mirrors), and some basic principles of physical optics.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisites: MAT 123, PHY 100 or PHY 101

PHY 105—Physics: Heat and Fluids
This course is an introduction to heat energy and its effects on various materials. The course content is designed to provide the fundamental concepts necessary to describe heat transfer processes involving moving fluids. Topics included are: pressure in liquids, laminar and turbulent flow of fluids, Bernoulli's principle, the ideal gas law, temperature and heat energy, and heat transfer via moving fluids.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: PHY 100

PHY 106-C—Applied Mechanics
This course is an introduction to statics. Some topics included are: the equilibrium of two and three dimensional force systems, centroid and center of gravity, and the analysis of trusses and frames.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisites: MAT 123, PHY 100

PHY 225—Forensic Physics
This course is a survey of a variety of topics from technical physics which are useful in understanding phenomena experienced and equipment used in the criminal justice field. The course can be divided into three principal areas of study - ray optics and converging lenses, simple electric circuits using relays to achieve the AND and OR logic functions, linear motion and kinetic energy. Particular attention is given to the student's understanding of the physical principles of operation of devices such as cameras, telescopes, and alarm circuits.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: MAT 121

PME 101—Marine Engines I
This is a course that introduces the student to basic construction of internal combustion engines of the reciprocating type. The use of hand tools and power tools, and basic maintenance and repair of related equipment including starters, water pumps, and generators will be covered. Outboard motors will be the primary type of engines studied in this course.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

PME 102—Marine Engines II
This course is a continuation of PME 101. Theory of operation, breakdown and overhaul of small engines, water pumps, and accessories will be emphasized. Maintenance on all school inboard and outboard engines will be conducted as an integral part of the course.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: PME 101

PME 105—Outboard Motor Repair
This course is designed to introduce students to the fundamentals of outboard engine maintenance and repair. It will include shop exercises in trouble-shooting, engine overhaul, lower unit repair, and control repair.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

PME 111—Emission Systems Diagnosis
The course provides the practicing technician with suggested diagnostic procedures used in checking motor vehicle emission. In addition, a considerable portion of the course is aimed toward recommended manufacturers' procedures for critical engine system adjustments. The course is designed to associate emissions failures or excessive HC (hydrocarbons) and/or CO (carbon monoxide) emission with infrared analyzer readings. Many of the failures experienced in I/M (inspection and maintenance) program are not new to practicing technicians. However, the association of these failures to infrared analyzer readings may be a new concept. The course allows a progression of failure detection from the most likely causes (and often the least expensive to repair) to the more complex causes. It also includes recognized tune-up and trouble-shooting procedures. It is essential that proper (recommended) manufacturers' procedures and specifications for adjustment are carried over and applied to everyday tune-up activities.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

PME 112—Marine Diesel and Gasoline Engines
This is a course introducing the student to the basic principles of operation of two- and four-cycle internal combustion marine engines. Methods of testing engine performance will be demonstrated to include maintenance and servicing of fuel systems, exhaust systems, cooling systems, and lubrication systems. Emphasis will be given to methods of diagnostic testing, repairing, proper maintenance, and preservation of marine engines.
Course Hours Per week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

POL 103—State and Local Government
This course is a study of state and local governments. Topics such as taxation, revenues, and city council proceedings are included. The legislative, executive, and judicial branches of state government will be discussed.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

PSY 211—Stress Management
A course designed to create in the individual an understanding of the nature of stress and to provide the technique for mastery over stress.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

PSY 217—Introduction to Psychology
This is a course designed to cover the basic principles of psychology that will be of assistance to the student in developing greater self-understanding and in improving interpersonal relationships on both individual and job-related bases. The content of the course includes the following: basic terminology, methods of gathering psychological data, psychology as a science, current schools of thought, learning theory and memory, personality development, stress and adjustment, and abnormal behavior.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

SHI 101, 102, 103, 104, 105, 106, 107, 108—Ocean Survey/Marine Projects
All students will receive training aboard a research vessel or participate in a marine project each quarter, depending on vessel status or weather conditions. In either case, students will be rotated on various assignments and can expect to apply theory and practice learned in regular classes. In cases where Ocean Survey is not available, for any reason, Marine Projects will be substituted. In either case, both options will require 60 hours of participation per quarter and will earn 2 Quarter Hours Credit.
Prerequisites for Ocean Survey: All preceding SHI courses, whether Ocean Survey or Marine Projects, and 12 additional quarter hours in the Marine Technology curriculum completed during each preceding quarter.
In cases where a SHI course was missed in a preceding quarter, to enable a student to both enroll in the next SHI course and make up the missed one, an arrangement must be made with the Division Director prior to the drop/add period only after it has been ascertained that the missed SHI course was due to extreme or unusual circumstances (death in family, sickness, etc.), and only if the hours for the course can be scheduled during a student's "free" time and at the convenience of the instructor who agrees to conduct the course.

SOC 102-C—Principles of Sociology
This is an introductory course designed to cover the basic prinicples of sociology and to provide an understand of culture, social structure, socialization, collective behavior, deviance and social control, stratification, and social mobility. Emphasis is placed on the scientific study of group behavior and the effect of social life on personality and behavioral development.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

SOC 206-C—American Institutions
This course is a study of the effect of American social, economic, political, religious, and educational institutions upon the individual's role as a citizen and a worker. The course dwells upon current local, national, and global problems in the light of our political and economic heritage.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

SOC 212—Sociology for Deviant Behavior
A study of the deviant personality and approaches to establishing reformative communications. The concept of Transactional Analysis is emphasized and demonstrated as it may be used in interviews, interrogations, and counseling.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

SOC 217-C—Juvenile Delinquency
This course is designed to analyze the causes, treatment, and prevention of delinquency. Emphasis is placed on the sociological and psychological parameters affecting adolescent development which may contribute to delinquency. Historical and contemporary points of view are compared.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

SOC 219—The Family in Society
This course will deal with the dynamic nature of the family institution. It is intended to build on the sociological foundation established in SOC 102-C. The primary expectation is that the student examine family systems and issues beyond their own experience and critique them in an objective and articulate theory with the reality in the community.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: SOC 102-C

WLD 134—Marine Welding
There will be welding demonstrations by the instructor and welding practice by students in the welding shop. The students should become proficient in welding stringer beads from the flat position to the vertical position in the time allotted during the quarter. Safe and correct methods of assembling and operating the welding equipment, the correct use of flame cutting and arc cutting equipment applicable to mechanical repair work will be demonstrated.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

TRADE CURRICULA

TRADE CURRICULA

In North Carolina, as well as throughout the nation, the demand for skilled tradesmen is at an all-time high. Hardly a day passes that the Institute does not have at least one call from industry looking for prospective employees. Graduates of the trade programs sometimes have as many as four or five offers of employment upon graduation.

Students in the skilled trade programs are trained in shops similar to those of private industries. The shops contain testing and measuring instruments, tools, and equipment of the same size and types as found in private firms. The facilities make possible practical instruction which is essential to the preparation of skilled workers needed by today's modern industries. Students in these trade programs spend twenty-five to thirty hours per week in school; this time is divided between classroom studies and practical shop work.

Skilled craftsmanship in the occupation, appropriate educational background and leadership ability are the bases for instruction selection in these trade courses.

A diploma is awarded to those students who satisfactorily complete the full-time trade program. To be eligible for the diploma, students must maintain satisfactory grades in all shop, class work, and maintain an overall grade point average of 2.00.

AUTHORIZED PROGRAMS

One year (12 months) training courses are offered in the following skilled trades:

Air Conditioning, Heating, and Refrigeration
Automotive Mechanics
Boat Building
Child Care Worker (Specialty Programs)
Commercial Fishing
Industrial Electricity
Industrial Maintenance
Light Construction
Machinist
Marine and Diesel Mechanics
Marine Maintenance and Related Occupations
Practical Nursing
Welding

ADMISSIONS REQUIREMENTS

The applicant must meet the following requirements:

1. must be at least 18 years of age, or his/her high school class must have graduated.

2. should be a high school graduate or equivalent.*

3. must demonstrate aptitude for technician training as determined by standard tests. These tests will aid in student selection, placement, and guidance. Guidance and counseling will be available to the student throughout his or her education, not just at the time of his or her enrollment.

4. must complete medical form as required by the school for specific courses of study only after being accepted.

5. come in for a personal interview when required.

Certain curricula may have special requirements in addition to the above stated criteria.

ADMISSION PROCEDURE

The applicant must complete the following procedures:

1. submit completed application.

2. have transcripts of all previous education mailed to the Institute.

3. take placement test.

4. come to the school for a personal interview and do additional testing when asked to do so.

5. submit medical form as required by the school for specific courses of study — only after being accepted.

*See page 178 in General Adult Education Section of this catalogue for details about the high school equivalency certificate.

AIR CONDITIONING, HEATING AND REFRIGERATION

The Air Conditioning, Heating, and Refrigeration curriculum develops an understanding of the basic principles involved in the construction, installation, operation and maintenance of climate control equipment. Courses in blueprint reading, duct construction, welding, circuits and controls, math, science and general education are included to help provide supporting skills necessary for the mechanic to function successfully in the trade.

The air conditioning, heating, and refrigeration mechanic installs, maintains, services, and repairs environmental control systems in residences, department and food stores, office buildings, industries, restaurants, institutions, and commercial establishments. Job opportunities exist with companies that specialize in air conditioning, heating and commercial refrigeration installation and service. The graduate should be able to assist in installing mechanical equipment, duct work, and electrical controls necessary in residential and commercial projects. With experience, the graduate should be able to service various air conditioning, heating, and refrigeration components; troubleshoot systems; and provide preventive maintenance required by mechanical equipment. This person may be employed in areas of maintenance installation, sales, and service in the field of air conditioning, heating and cooling.

AIR CONDITIONING, HEATING AND REFRIGERATION

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
AHR	1116	Oil Burner Installation and Service	4	0	6	6
AHR	1121-C	Principles of Refrigeration — Part I	2	0	3	3
DFT	1104-C	Blueprint Reading	2	0	0	2
ELC	1102-C	Applied Electricity — Part I	3	0	0	3
MAT	1101-C	Trade Mathematics	5	0	0	5
			16	0	9	19
SECOND QUARTER						
AHR	1117	Gas Burners, Electric Heat and Liquid Heat Applications	5	2	0	6
AHR	1125	Principles of Refrigeration — Part II	3	0	6	5
DFT	1116-C	Blueprint Reading: Air Conditioning	1	0	3	2
EGY	1101	Introduction to Solar Energy Systems	1	2	0	2
ELC	1103-C	Applied Electricity — Part II	2	0	0	2
			12	4	9	17
THIRD QUARTER						
AHR	1123	Principles of Air Conditioning	3	0	6	5
AHR	1124-C	Air Conditioning Servicing	2	0	9	5
ENG	1101-C	Communication Skills	2	0	0	2
PHY	1101-C	Applied Science	3	0	0	3
			10	0	15	15
FOURTH QUARTER						
AHR	1109	Job Planning and Estimating	2	0	0	2
AHR	1126	All Year Comfort Systems	4	2	6	7
AHR	1128	Automatic Controls	3	0	6	5
PSY	1101-C	Human Relations	2	0	0	2
			11	2	12	16

See pages 150 to 173 for course descriptions.

AUTOMOTIVE MECHANICS

The Automotive Mechanics curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair and adjust automotive vehicles. Manual skills are developed in practical shop work; technical understanding of the operating principles involved in the modern automobile are taught through class assignments, discussions and shop practices.

Automobile mechanics maintain and repair mechanical, electrical and body parts of passenger cars, trucks and buses. In some communities and rural areas they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test equipment to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition and use shop manuals and other technical publications as references for technical data. Persons completing this curriculum may find employment with franchised automobile dealers, independent garages, or may start their own business.

AUTOMOTIVE MECHANICS

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
ENG	1101-C	Communication Skills	2	0	0	2
MAT	1101-C	Trade Mathematics	5	0	0	5
PHY	1101	Applied Science	3	2	0	4
PME	1101	Internal Combustion Engines	3	0	15	8
			13	2	15	19
SECOND QUARTER						
AUT	1126	Schematics and Diagrams: Automotive	0	0	3	1
AUT	1129	Emission Systems: Automotive	2	0	3	3
ENG	1102-C	Communication Skills	2	0	0	2
PME	1102	Engine Electrical and Fuel Systems	5	0	15	10
			9	0	21	16
THIRD QUARTER						
AHR	1100	Automotive Air Conditioning	1	0	3	2
AUT	1120	Automotive Analysis	2	0	3	3
AUT	1121	Braking Systems	3	0	3	4
AUT	1123	Automotive Chassis and Suspension Systems	3	0	9	6
PSY	1101	Human Relations	3	0	0	3
			12	0	18	18
FOURTH QUARTER						
AUT	1124	Automotive Power-Train Systems	3	0	9	6
AUT	1125	Automotive Servicing	3	0	9	6
BUS	1103	Small Business Operations	3	0	0	3
WLD	1101-C	Basic Welding	0	0	3	1
			9	0	21	16
UPGRADING ELECTIVE						
AUT	1132	Advanced Automotive Electronics	6	0	9	9

See pages 150 to 173 for course descriptions.

BOAT BUILDING

The Boat Building curriculum prepares individuals to build and repair boats made primarily of wood and/or fiberglass construction. The curriculum includes instruction in mathematics, blueprint reading, hand and machine woodworking tools, marine fiberglassing, and welding.

The graduate will be qualified for entry into a boat building and repair industry that specializes in constructing wood type vessels or may work in a firm that specializes in maintenance and repair of boats.

BOAT BUILDING

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
DFT	1127	Marine Drafting	5	0	3	6
MAT	1101-C	Trade Mathematics	5	0	0	5
MSC	1110	Boat Building I	11	0	6	13
			21	0	9	24
SECOND QUARTER						
CAR	1106	Marine Jointer Practices	6	0	3	7
ELC	1106-C	Practical Marine Electricity	3	0	0	3
MSC	1111	Boat Building II	9	0	9	12
			18	0	12	22
THIRD QUARTER						
ENG	1101-C	Communication Skills	2	0	0	2
MRO	1118	Marine Fiberglassing	0	0	3	1
MSC	1112	Boat Building III	9	0	12	13
PHY	1101	Applied Science	3	2	0	4
			14	2	15	20
UPGRADING ELECTIVES						
MSC	1117	Advanced Lofting	0	0	6	2
MSC	1118	Spar Making	0	0	6	2
MSC	1119	Lamination Techniques	0	0	6	2
MSC	1120	Lapstrake Construction	0	0	6	2

See pages 150 to 173 for course descriptions.

CHILD CARE WORKER (Specialty Programs)

The Child Care Worker curriculum prepares individuals to work as assistants with early childhood specialists in day-care centers, nursery schools, kindergartens, child development centers, hospitals, institutions, camps and recreation centers. This curriculum provides course work to meet the requirements for entry level employment and upgrading or retraining of staff in child care facilities.

Instruction includes theory and application in child care, growth and development of children, behavior patterns of children, health practices and how to deal with the emotional and physical problems of children.

The following two specialty programs have been extracted from the approved Child Care Worker curriculum and are both offered as specialty certificate programs.

CHILD CARE WORKER (Specialty Programs)

INFANT-TODDLER CERTIFICATE
0-36 MONTHS

		INFANT-TODDLER CERTIFICATE 0-36 MONTHS	HOURS PER WEEK Class	Lab	Practicum	Quarter Hours Credit
REQUIRED COURSES						
EDU	1101	Child Growth and Development (Infant-Toddler 0-36 months)	1	2	10	3
EDU	1105	Health, Safety and Nutrition for Young Children	3	0	0	3
EDU	1111	Communicating Effectively with Young Children (Interpersonal Skills, Staff, Parents, Children Discipline and Behavior Management)	3	0	0	3
EDU	1130	Introduction to Preschool Education	3	0	0	3
EDU	1138	Program Planning for Infants and Toddlers	1	2	10	3
EDU	1148	Infant-Toddler Care	3	0	0	3
						18

PRESCHOOL CERTIFICATE
2-5 YEARS

			HOURS PER WEEK Class	Lab	Practicum	Quarter Hours Credit
REQUIRED COURSES						
EDU	1006	Language Arts in Early Childhood	1	2	10	3
EDU	1009	Art in the Early Childhood Program	1	2	10	3
EDU	1022	Math, Science and Social Studies for Young Children	3	0	0	3
EDU	1102	Child Growth and Development (Preschool 2-5 years)	3	0	0	3
EDU	1103	Music and Integrated Activities	1	2	0	2
EDU	1105	Health, Safety and Nutrition for Young Children	3	0	0	3
EDU	1130	Introduction to Preschool Education	3	0	0	3
						20

See pages 150 to 173 for course descriptions.

COMMERCIAL FISHING

The Primary objective of the Commercial Fishing curriculum is to develop the student's ability to function effectively in any task assigned to him/her as a member of a fishing crew. The curriculum emphasizes the development of commercial fishermen through practical, hands-on application in all phases of this highly skilled trade. Students learn how to maintain and repair all equipment used aboard the fishing vessel and the various seamanship skills which are put into actual practice at sea.

Employment opportunities are available to the graduates of the curriculum in the various commercial fishing enterprises along the eastern seaboards of the United States.

COMMERCIAL FISHING

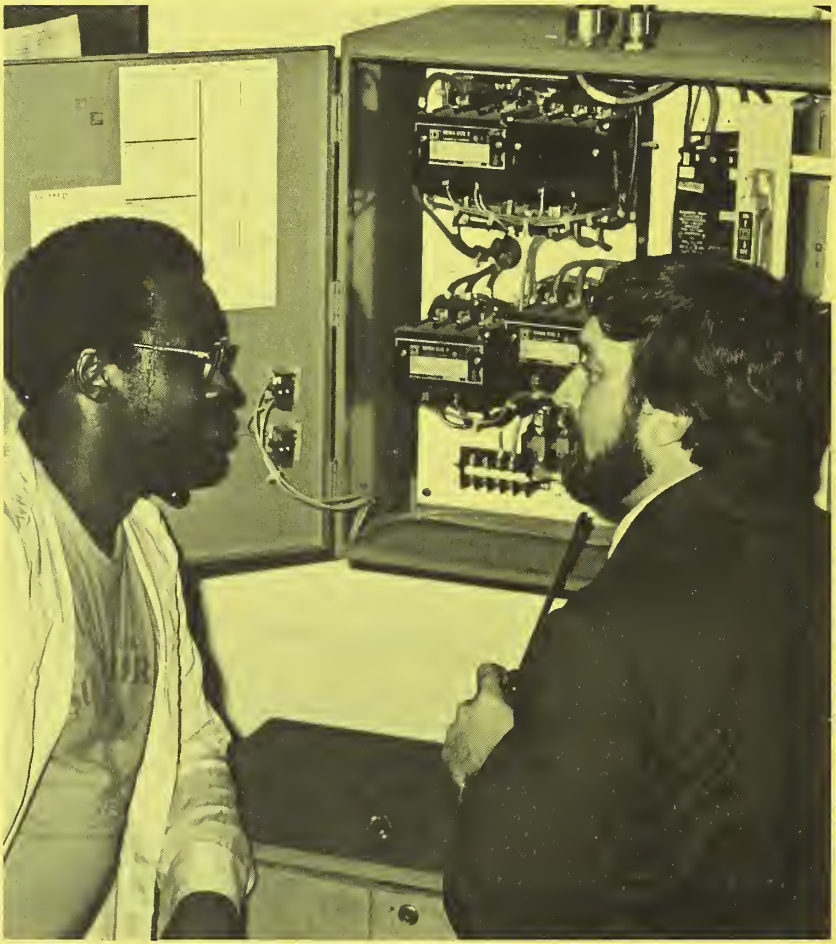
			HOURS PER WEEK Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
BIO	1101	Introduction to Marine Biology	4	0	0	4
MAT	1101-C	Trade Mathematics	5	0	0	5
MRO	1101	Rules of the Road and Piloting	2	4	0	4
MRO	1106	Practical Marine Engineering I	1	4	0	3
MRO	1139	Rigging and Seamanship	1	0	3	2
WLD	1106	Welding and Burning I	0	0	6	2
***		Fishing Operations at Sea				
			13	8	9	20
SECOND QUARTER						
CFT	1101	Fishing Operations I	0	0	6	2
ELC	1106	Practical Marine Electricity I	2	4	0	4
ENG	1101-C	Communication Skills	2	0	0	2
MRO	1102	Electronic Aids to Navigation	1	0	3	2
MRO	1107	Practical Marine Engineering II	2	4	0	4
WLD	1107	Welding and Burning II	0	0	6	2
***		Fishing Operations at Sea				
			7	8	15	16
THIRD QUARTER						
CFT	1102	Fishing Operations II	2	0	6	4
DFT	1111	Machine Trade Blueprint Reading and Sketching	1	0	3	2
ELC	1107	Practical Marine Electricity II	2	4	0	4
MRO	1108	Practical Marine Engineering III	1	2	0	2
MRO	1140	Marine Safety-First Aid, Life Boat Drills and Fire Fighting Aboard Ship	1	0	3	2
PHY	1101-C	Applied Science	3	0	0	3
PSY	1101-C	Human Relations	2	0	0	2
***		Fishing Operations at Sea				
			12	6	12	19
FOURTH QUARTER						
CFT	1103	Fishing Operations III	0	0	15	5
MRO	1109	Practical Marine Engineering IV	2	4	0	4
MSC	1141	Navigation	2	0	3	3
MSC	1114	Marine Fishery Science and Seafood Handling	2	2	0	3
***		Fishing Operations at Sea				
			6	6	18	15

***Fishing Operations at Sea: Students will spend 10-15 days each quarter at sea on the Institute's training vessels. A typical voyage will be 5 days in duration. Depending upon the nature of the training; however, a trip may extend over a one to two week period.

See pages 150 to 173 for course descriptions.

INDUSTRIAL ELECTRICITY

The Industrial Electricity program is designed to prepare students for the installation, repair, and maintenance of electrical equipment. The emphasis is on motors and related control systems, but students who take the basic courses will have sufficient knowledge and skill to work as helpers for electricians or repairmen in house wiring, small appliance repair, industrial maintenance, linemen, and related jobs.



INDUSTRIAL ELECTRICITY

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
ELC	1104	Basic Electricity I	5	0	9	8
ELN	1106	Instrument Familiarization	3	0	6	5
ENG	1101-C	Communication Skills	2	0	0	2
MAT	1101-C	Trade Mathematics	5	0	0	5
			15	0	15	20
SECOND QUARTER						
ELC	1105	Basic Electricity II	5	0	9	8
ELN	1111	Electro-Mechanical Relays and Symbols	3	0	6	5
ENG	1102-C	Communication Skills	2	0	0	2
MAT	1125	Industrial Calculations	5	0	0	5
			15	0	15	20
THIRD QUARTER						
DFT	1104	Blueprint Reading	2	0	3	3
ELC	1115	AC and DC Machinery	4	0	9	7
ELC	1116	Motor Control	3	0	6	5
PSY	1101	Human Relations	3	0	0	3
			12	0	18	18
FOURTH QUARTER						
DFT	1109	Blueprint Reading	2	0	3	3
ELC	1125	Industrial Wiring Practices	4	0	6	6
ELN	1130	Solid State Devices, Circuits and Symbols	5	0	6	7
WLD	1101-C	Basic Welding	0	0	3	1
			11	0	18	17

See pages 150 to 173 for course descriptions.

INDUSTRIAL MAINTENANCE

The curriculum in Industrial Maintenance prepares students to repair and maintain machinery, electrical wiring and fixtures, and hydraulic and pneumatic devices found in industrial establishments.

Industrial maintenance persons may be required to install, maintain and service mechanical equipment; follow blueprints and sketches; and use hand tools, metal working machines, and measuring and testing instruments. They operate metalworking machines such as the lathe, milling machine, and drill press to make repairs. They use the micrometer and calipers to varify dimensions. They assemble wires, insulation, and electrical components using hand tools and soldering equipment. They test electrical circuits and components to locate shorts, faulty connections, and defective parts. They inspect, test and repair hydraulic equipment.

INDUSTRIAL MAINTENANCE

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
DFT	1104	Blueprint Reading	2	0	3	3
MAT	1101-C	Trade Mathematics	5	0	0	5
MEC	1127	Industrial Mechanics I	5	0	9	8
WLD	1106	Welding and Burning I	0	0	6	2
			12	0	18	18
SECOND QUARTER						
DFT	1105-C	Blueprint Reading	0	0	3	1
ENG	1101-C	Communication Skills	2	0	0	2
MAT	1102-C	Trade Mathematics	5	0	0	5
MEC	1128	Industrial Mechanics II	5	0	9	8
WLD	1107	Welding and Burning II	0	0	6	2
			12	0	18	18
THIRD QUARTER						
DFT	1108-C	Blueprint Reading	2	0	3	3
ELC	1104-C	Basic Electricity I	1	0	3	2
MEC	1121	Industrial Hydraulics I	1	0	3	2
MEC	1129	Industrial Mechanics III	5	0	9	8
PSY	1101	Human Relations	3	0	0	3
			12	0	18	18
FOURTH QUARTER						
ELC	1117-C	Industrial AC Motors and Controls	1	0	3	2
MEC	1122	Industrial Hydraulics II	1	0	3	2
MEC	1130	Industrial Mechanics IV	6	0	12	10
PHY	1101-C	Applied Science	3	0	0	3
			11	0	18	17

See pages 150 to 173 for course descriptions.

LIGHT CONSTRUCTION

The Light Construction curriculum prepares individuals for employment in the building trades industry. Instruction is provided in carpentry, masonry, electrical wiring, and plumbing. Students study applied mathematics, blueprint reading and sketching, safety, and other related subjects. They learn the methods used in laying out a small structure, mixing and pouring cement, rough framing, laying brick and block, roofing, and exterior finishing.

Graduates may find employment with home builders or with commercial building contractors. They may enter the building trades as apprentices; or work as building maintenance mechanics in small industries or public buildings including schools, hospitals, and apartment houses. After sufficient experience in the trade, some workers may establish their own business.

LIGHT CONSTRUCTION

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
CAR	1101-C	Carpentry (Rough)	6	0	12	10
DFT	1110	Building Trades Blueprint Reading and Sketching	5	0	0	5
ENG	1101-C	Communication Skills	2	0	0	2
MAT	1101-C	Trade Mathematics	5	0	0	5
			18	0	12	22
SECOND QUARTER						
CAR	1102-C	Carpentry (Framing)	5	0	15	10
DFT	1113	Blueprint Reading: Building Trades	5	0	0	5
ENG	1102-C	Communication Skills	2	0	0	2
PSY	1101	Human Relations	3	0	0	3
			15	0	15	20
THIRD QUARTER						
CAR	1103-C	Carpentry (Finish)	4	0	21	11
PLU	1101	Basic Plumbing	2	0	3	3
			6	0	24	14
FOURTH QUARTER						
CAR	1135	Blueprints and Field Coordination	2	0	3	3
ELC	1109	Electrical Wiring	2	0	3	3
MAS	1101-C	Masonry	5	0	15	10
			9	0	21	16

See pages 150 to 173 for course descriptions.

MACHINIST

The Machinist curriculum gives individuals the opportunity to acquire basic skills and related technical information necessary to gain employment as machinists. The machinist is a skilled metalworker who shapes metal by using machine tools and hand tools. Machinists must be able to set up and operate the machine tools found in a modern shop. The machinist is able to select the proper tools and materials required for each job and to plan the cutting and finishing operations in their proper order so that the work can be finished according to blueprint or written specifications. The machinist makes computations relating to dimensions of work, tooling, feeds and speeds of machining. Precision measuring instruments are used to measure the accuracy of work. The machinist also must know the characteristics of metals so that annealing and hardening of tools and metal parts can be accomplished in the process of turning a block of metal into an intricate precise part.

MACHINISTS

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
DFT	1104	Blueprint Reading	2	0	3	3
ENG	1101-C	Communication Skills	2	0	0	2
MAT	1101-C	Trade Mathematics	5	0	0	5
MEC	1101	Machine Shop Theory and Practice	3	0	15	8
			12	0	18	18
SECOND QUARTER						
DFT	1105-C	Blueprint Reading	0	0	3	1
MAT	1102-C	Trade Mathematics	5	0	0	5
MEC	1102	Machine Shop Theory and Practice	3	0	15	8
WLD	1101	Basic Welding	1	0	3	2
			9	0	21	16
THIRD QUARTER						
DFT	1106	Blueprint Reading	0	0	3	1
MAT	1122	Machinists Mathematics I	5	0	0	5
MEC	1103	Machine Shop Theory and Practice	3	0	15	8
MEC	1109	Computer Controlled Machine Tools	2	2	0	3
			10	2	18	17
FOURTH QUARTER						
MAT	1123	Machinists Mathematics II	5	0	0	5
MEC	1104	Machine Shop Theory and Practice	4	0	12	8
MEC	1115-C	Applied Metallurgy	2	2	0	3
PHY	1101	Applied Science	3	2	0	4
			14	4	12	20

See pages 150 to 173 for course descriptions.

MARINE AND DIESEL MECHANICS

The Marine Mechanics curriculum provides training for individuals interested in becoming mechanics to service and maintain the propulsion system for boats and various type of marine equipment. Manual skills in servicing marine equipment are developed in practical shop work. A thorough understanding of the operating principles of this equipment is provided through classroom instruction, laboratory experiments, groups discussions, and shop practices.

Marine engine mechanics maintain and repair mechanical, electrical, hydraulic, and pneumatic equipment used on boats and in industrial applications. Mechanics inspect and test equipment to determine the causes of faulty operations; repair or replace defective parts to restore the machine or unit to proper operating condition; and use shop manuals, manufacturers' maintenance manuals, and other publications for technical information.

MARINE AND DIESEL MECHANICS

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
ENG	1101-C	Communication Skills	2	0	0	2
MAT	1101-C	Trade Mathematics	5	0	0	5
PHY	1101	Applied Science	3	2	0	4
PME	1101	Internal Combustion Engines	3	0	15	8
			13	2	15	19
SECOND QUARTER						
ELC	1111	Direct and Alternating Electricity	2	2	0	3
MDE	1101	Marine and Diesel Engine Theory and Practice I	4	0	15	9
MDE	1104	Marine and Diesel Power-Train Systems I	1	0	3	2
PME	1131	Schematics and Diagrams: Marine and Diesel	3	0	0	3
			10	2	18	17
THIRD QUARTER						
MDE	1102	Marine and Diesel Engine Theory and Practice II	3	0	12	7
MDE	1105	Marine and Diesel Power-Train Systems II	1	0	3	2
MDE	1108	Gas Diesel Fuel Systems I	1	0	3	2
PSY	1101	Human Relations	3	0	0	3
WLD	1101	Basic Welding	1	0	3	2
			9	0	21	16
FOURTH QUARTER						
MDE	1103	Marine and Diesel Engine Theory and Practice III	3	0	15	8
MDE	1109	Gas Diesel Fuel Systems II	3	0	0	3
PME	1136	Fundamentals of Hydraulics	3	0	6	5
			9	0	21	16

See pages 150 to 173 for course descriptions.

MARINE MAINTENANCE AND RELATED OCCUPATIONS

This curriculum is designed to train workers in seamanship, ship maintenance, towing operations, and salvage.

Upon completion of this curriculum, an individual will be qualified to work as an able seaman or in jobs in ship building, ship maintenance, or salvage operations.

MARINE MAINTENANCE AND RELATED OCCUPATIONS

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
MRO	1101	Rules of the Road and Piloting	2	4	0	4
MRO	1106	Practical Marine Engineering I	1	4	0	3
MRO	1139	Rigging and Seamanship	1	0	3	2
SHI	1101	Ships' Equipment, Maintenance and Repair I	3	0	6	5
WLD	1106	Welding and Burning I	0	0	6	2
***		Ocean Training Voyages				
			7	8	15	16
SECOND QUARTER						
ELC	1106	Practical Marine Electricity I	2	4	0	4
ENG	1101-C	Communication Skills	2	0	0	2
MRO	1102	Electronic Aids to Navigation	1	0	3	2
MRO	1107	Practical Marine Engineering II	2	4	0	4
SHI	1102	Ships' Equipment, Maintenance and Repair II	3	0	3	4
WLD	1107	Welding and Burning II	0	0	6	2
***		Ocean Training Voyages				
			10	8	12	18
THIRD QUARTER						
DFT	1111	Machine Trade Blueprint Reading and Sketching	1	0	3	2
ELC	1107	Practical Marine Electricity II	2	4	0	4
MRO	1108	Practical Marine Engineering III	1	2	0	2
MRO	1140	Marine Safety-First Aid, Life Boat Drills and Fire Fighting Aboard Ship	1	0	3	2
PHY	1101-C	Applied Science	3	0	0	3
PSY	1101-C	Human Relations	2	0	0	2
SHI	1103	Ships' Equipment, Maintenance and Repair III	2	0	6	4
***		Ocean Training Voyages				
			12	6	12	19
FOURTH QUARTER						
ELC	1108	Practical Marine Electricity III	2	4	0	4
MRO	1109	Practical Marine Engineering IV	2	4	0	4
MRO	1115	Towboat Operations	2	0	6	4
SHI	1104	Ships' Equipment, Maintenance and Repair IV	4	0	6	6
***		Ocean Training Voyages				
			10	8	12	18

***Ocean Training Voyages: Students will spend 10-15 days each quarter at sea on the Institute's training vessels. A typical voyage will be 5 days in duration. Depending upon the nature of the training; however, a trip may extend over a one to two week period.

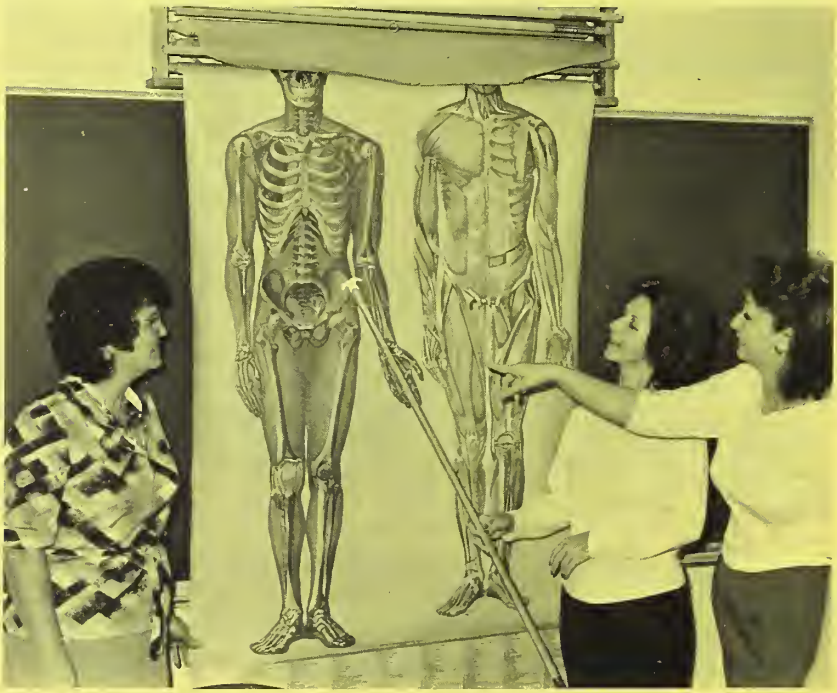
See pages 150 to 173 for course descriptions.

PRACTICAL NURSING

The Practical Nursing curriculum graduates are prepared to take the National Council Licensure Examination required to practice as a licensed practical nurse. The Practical Nursing curriculum is designed to develop competencies in practicing the following five components of practice as defined by the North Carolina *Nursing Practice Act,* 1984: (1) participating in assessing the client's physical and mental health including the client's reaction to illnesses and treatment regimens; (2) recording and reporting the results of the nursing assessment; (3) participating in implementing the health care plan developed by the registered nurse and/or prescribed by any person authorized by State law to prescribe such a plan, by performing tasks delegated by and performed under the supervision or under orders or directions of a registered nurse, physician licensed to practice medicine, dentist, or other person authorized by State law to provide such supervision; (4) reinforcing the teaching and counseling of a registered nurse, physician licensed to practice medicine in North Carolina, or dentist; and (5) reporting and recording the nursing care rendered and the client's response to that care.

Licensed practical nurses may be employed in hospitals, nursing homes, clinics, doctors' offices, industry, and public health agencies.

Individuals desiring a career in practical nursing should be encouraged to take math and science courses in high school.



PRACTICAL NURSING

			HOURS PER WEEK			
			Class	Lab	Clinical	Quarter Hours Credit
FIRST QUARTER						
BIO	1001	Health	3	0	0	3
BIO	1002	Anatomy and Physiology	6	0	0	6
ENG	1103	Grammar	3	0	0	3
NUR	1101	Nursing Skills	4	2	3	6
NUT	1101	Nutrition and Diet Therapy	4	0	0	4
PSY	1101	Human Relations	3	0	0	3
			23	2	3	25
SECOND QUARTER						
NUR	1102	Medical-Surgical Nursing I	5	2	6	8
NUR	1103	Pediatrics	5	0	9	8
PSY	1102	Growth and Development	3	0	0	3
			13	2	15	19
THIRD QUARTER						
NUR	1104	Obstetrics	6	0	12	10
NUR	1105	Pharmacology	5	2	6	8
			11	2	18	18
FOURTH QUARTER						
NUR	1106	Medical-Surgical Nursing II	7	2	9	11
NUR	1107	Medical-Surgical Nursing III	4	0	6	6
			11	2	15	17

See pages 150 to 173 for course descriptions.

WELDING

The Welding curriculum gives students sound understanding of the principles, methods, techniques, and skills essential for successful employment in the welding field and metals industry. Welders join metals by applying intense heat, and sometimes pressure, to form a permanent bond between intersecting metals.

Welding offers employment in practically any industry: shipbuilding, automotive, aircraft, guided missiles, heavy equipment, railroads, construction, pipefitting, production shops, job shops, and many others.

WELDING

			HOURS PER WEEK			
			Class	Lab	Manipulative Lab	Quarter Hours Credit
FIRST QUARTER						
DFT	1112	Blueprint Reading: Welding	1	0	3	2
MAT	1101-C	Trade Mathematics	5	0	0	5
WLD	1119	Basic Arc Welding and Oxy-Fuel Cutting	6	0	9	9
			12	0	12	16
SECOND QUARTER						
DFT	1117-C	Blueprint Reading: Welding	0	0	3	1
MEC	1115-C	Applied Metallurgy	2	2	0	3
PHY	1101-C	Applied Science	3	0	0	3
WLD	1127	Advanced Arc Welding	6	0	9	9
			11	2	12	16
THIRD QUARTER						
DFT	1120	Blueprint Reading of Pipe Drawings and Pipe Sketchings	0	0	3	1
ENG	1101-C	Communication Skills	2	0	0	2
PHY	1102-C	Applied Science	3	2	0	4
WLD	1122	Commercial and Industrial Practice	3	0	0	3
WLD	1123	Inert Gas Welding (Tig, Mig and Plasma)	6	0	6	8
			14	2	9	18
FOURTH QUARTER						
DFT	1119	Pattern Development and Sketching	0	0	6	2
ENG	1102-C	Communication Skills	2	0	0	2
PSY	1101-C	Human Relations	2	0	0	2
WLD	1124	Pipe Welding	4	0	6	6
WLD	1125	Certification Practices	3	0	3	4
			11	0	15	16

See pages 150 to 173 for course descriptions.

TRADE COURSE DESCRIPTIONS

AHR 1100—Automotive Air Conditioning
General introduction to the principles of refrigeration, study of assembly of the components and connections necessary in the mechanisms, and the methods of refrigerants in charging the system.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

AHR 1109—Job Planning and Estimating
Estimating loads and capacity of refrigeration and cooling units through the use of manuals, tables, and charts. Students will be expected to acquire sufficient knowledge to determine and recommend the adequate sizing of cooling units for specific use either in homes or industry.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: MAT 1102-C

AHR 1116—Oil Burner Installation and Service
An introduction to the principles of heating, terminology, and the use and repair of equipment. Also included will be maintenance and service of heating units and diagnosing troubles within installation. Thermostat controls are also a part of this course.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisite: None

AHR 1117—Gas Burners, Electric Heat and Liquid Heat Applications
An introduction to the principles of heating with the use of gas, electric, or liquid heat units. The course includes installation and service of the above forms of heating units. The course will also include servicing and corrective maintenance techniques as it applies to the above three forms of heating units.
Course Hours Per Week: Class 5, Lab 2. Quarter Hours Credit 6.
Prerequisite: ELC 1102-C

AHR 1121-C—Principles of Refrigeration—Part I
An introduction to the principles of refrigeration terminology, the use and care of tools and equipment, and the identification and the function of the component parts of a system. Other topics to be included will be the basic laws of refrigeration; characteristics and comparison of the various refrigerants; the use and construction of valves, fittings, and basic controls. Practical work includes tube bending, flaring, and soldering. Standard procedures and safety measures are stressed in the use of special refrigeration service equipment and the handling of refrigerants.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

AHR 1123—Principles of Air Conditioning
Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification, and temperature control of air in an air-conditioned space. Installation of various ducts and lines needed to connect various components is made.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: AHR 1125

AHR 1124-C—Air Conditioning Servicing
Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification, and temperature control of air in an air-conditioned space. Installation of various ducts and lines needed to connect various components is made. Shop work involves controls, testing and adjusting of air conditioning equipment, and location and correction of equipment failure.
Course Hours Per Week: Class 2, M. Lab 9. Quarter Hours Credit 5.
Prerequisites: AHR 1125, ELC 1103-C

AHR 1125—Principles of Refrigeration—Part II
The student will learn how to take air measurement using the pilot tube to calculate velocity in feet per minute, how to use the pilot tube measuring round duct, rectangular duct, how to use the anemometer, and how to calculate C.F.M. using the temperature-rise method.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: AHR 1121-C

AHR 1126—All Year Comfort Systems
Auxiliary equipment used in conjunction with refrigeration systems to provide both heating and cooling for "all year" comfort will be studied and set up in the laboratory. Included will be oil-fired systems, gas fired systems, water circulating systems, and electric-resistance systems. Installation of heat pumps will be studied along with servicing techniques. Reversing values, special types of thermostatic expansion valves, systems of de-icing coils, and electric wiring and controls are included in the study.
Course Hours Per Week: Class 4, Lab 2, M. Lab 6. Quarter Hours Credit 7.
Prerequisites: AHR 1125, AHR 1117

AHR 1128—Automatic Controls
Students will study the various control thermostat systems used by manufacturers for the installation of their equipment. This course includes resetting and calibrating of control units used on the various heating systems. The principles of how these controls work is also discussed.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: ELC 1103-C

AUT 1120—Automotive Analysis
An analytical approach to trouble-shooting and preventive maintenance through the use of mechanical equipment, electronic instrumentation, and visual inspection will be studied. Students will train on various electronic analysis equipment (chassis dynamometer, combustion analyzer, etc.) for proper trouble-shooting diagnosis. Students will be instructed in procedures to be followed in trouble-shooting analysis of an internal combustion engine, brakes, steering and suspension, electrical circuits, and drive lines.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

AUT 1121—Braking Systems
A complete study of the various braking systems employed on automobiles and lightweight trucks will be covered. Emphasis is placed on how they operate, proper adjustment, and safety factors involved.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisite: None

AUT 1123—Automotive Chassis and Suspension Systems
This course includes the principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension and steering systems will be covered. Units to be studied: shock absorbers, springs, steering systems, steering linkage, and front end alignment.
Course Hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: None

AUT 1124—Automotive Power-Train Systems
This course will include the principles and functions of automotive power train systems: clutches, transmission gears, torque converters, drive shaft assemblies, rear axles, and differentials. Identification of troubles, servicing, and repair will be covered.
Course Hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: None

AUT 1125—Automotive Servicing
Emphasis is on the shop procedures necessary in determining the nature of troubles which may develop in the various component systems of the automobile. Trouble-shooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing, and replacing will be covered.
Course Hours Per Week: Class 3, M. Lab 9. Quarter Hours Credit 6.
Prerequisite: None

AUT 1126—Schematics and Diagrams: Automotive
Interpretation and reading of manufacturing diagrams. Development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes will be covered.
Course Hours Per week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None

AUT 1129—Emission Systems: Automotive
The purpose of this program is to provide a basic knowledge of what the various Emission Control Systems are and how they operate. Once the basics of these systems are understood, the knowledge can be applied to specific applications which the student will use to handle future changes in Emission Control Systems. Topics to be covered are Air Pollution, Major Pollutants, Photochemical Smog, Hydrocarbon, Carbon Monoxide, oxides of Nitrogen, particulates, Air Pollution legislation and regulatory agencies, and automotive emission controls.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

AUT 1132—Advanced Automotive Electronics
A thorough study of the electrical system of 1980 and newer model automobiles, directly related to electronic ignition and computer operated engine accessory systems. An understanding of analog computers and their signal adders, multipliers, and other analog circuitry.
Course Hours Per Week: Class 6, M. Lab 9. Quarter Hours Credit 9.
Prerequisites: PME 1102, AUT 1129, AUT 1126, or approval of instructor based upon professional experience.

BIO 1001—Health
This course assists in helping the student understand the meaning of health and all types of health. It also describes personal health and how it relates to nurses and patients. Useful signs in evaluating health are explained. Health agencies in the community are identified and a public health nurse and a sanitarian are invited as guest speakers. The individual and how he or she relates to his environment help the student to understand how the health of some patients has been affected. In summary, a description of the health team and the identification of its various members are given.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

BIO 1002—Anatomy and Physiology
This course is designed to help the student gain a beginning knowledge of heredity, including an understanding of the cell, tissues, organs, and organ systems. An introduction to bacteriology will be given as well as to body defenses, including the types of immunity. Detailed instruction will be given in learning the systems of the body.
Course Hours Per Week: Class 6. Quarter Hours Credit 6.
Prerequisite: None

BIO 1101—Introduction to Marine Biology
This course is designed to acquaint the student with the fundamentals of marine biology applicable to his or her field of work.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None

BUS 1103—Small Business Operations
This course is an introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer - employee relations.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

CAR 1101-C—Carpentry (Rough)
A brief history of carpentry. Present trends of the construction industry will be covered along with the operation, care, and safe use of carpenters' handtools and power tools in cutting, shaping, and joining construction materials used by the carpenter. The carpenters' ruler and framing square will be emphasized in this course.
Course Hours Per Week: Class 6, M. Lab 12. Quarter Hours Credit 10.
Prerequisite: None

CAR 1102-C—Carpentry (Framing)
Practical application in rough carpentry which consists of: framing, roofing, window and exterior door installation, exterior wall covering, exterior trim and form work. Also, application of the ruler and framing square will be included.
Course Hours Per Week: Class 5, M.Lab 15. Quarter Hours Credit 10.
Prerequisite: None

CAR 1103-C—Carpentry (Finish)
Millwork as performed by the general carpenter during building construction using shop tools and equipment will be emphasized in this course. Practical applications will include measuring, layout, and construction of door and window frames, stairs, interior and exterior cornice and trim work. Prefabricated materials will also be covered. Exterior and interior trim and finish carpentry will be studied.
Course Hours Per Week: Class 4, M. Lab 21. Quarter Hours Credit 11.
Prerequisite: None

CAR 1106—Marine Jointer Practices
Basic application and theory of jointer work will be included. The skills required to construct and utilize jigs will be a major portion of the course. Students will learn to construct such appurtenances as rudders, centerboard trunk, oars, hatches and hatch coamings, and portholes. Special attention will be given to the tools required and the detail involved in making molds, patterns, and interior work.
Course Hours Per Week: Class 6, M. Lab 3. Quarter Hours Credit 7.
Prerequisite: None

CAR 1135—Blueprints and Field Coordination
Construction blueprints will be studied and field trips will be made to construction sites in order that students may gain first-hand experience reading project blueprints of jobs under construction presently by contractors.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

CFT 1101—Fishing Operations I
Designed to introduce the student to various fishing methods including gill netting, haul seining, and traps, etc. The different materials used for building fishing gear will be studied. Basic net fabrication and net mending are also introduced. Instruction in maintenance and repair of vessel and gear will also be included. Field trips will include visits to ports to observe other types of fishing vessels and fishing methods.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: None

CFT 1102—Fishing Operations II
This course is a continuation of CFT 1101. Fishing trips will be made using as many types of gear as possible for catching the various kinds of fish in season. The students on field trips will continue to observe other vessels and methods of fishing. Importance of maintenance and repair of vessel and gear will be stressed.
Course Hours Per Week: Class 2, M. Lab 6. Quarter Hours Credit 4.
Prerequisite: CFT 1101

CFT 1103—Fishing Operations III
This course is a continuation of CFT 1102 designed to study in-depth fishing methods and gear construction and give students as much "hands-on" practical experience as possible. Numerous and extensive field trips will be necessary to obtain these goals. Students' knowledge of maintenance and repair of vessel and gear will continue to be practiced.
Course Hours Per Week: M. Lab 15. Quarter Hours Credit 5.
Prerequisite: CFT 1102

DFT 1104—Blueprint Reading
Interpretation and reading of blueprints. Information on the basic principles of the blueprint: lines, views, dimensioning procedures, and notes.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

DFT 1104-C—Blueprint Reading
Interpretation and reading of blueprints. Information on the basic principles of the blueprint: lines, views, dimensioning procedures, and notes. There are fewer assigned projects required than in DFT 1104.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

DFT 1105-C—Blueprint Reading
Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operation, introduction to drafting room procedures; sketching as a means of passing on ideas, information, and processes.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: DFT 1104.

DFT 1106—Blueprint Reading
Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawing of complex parts and mechanisms for features of fabrication, construction, and assembly.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: DFT 1105-C

DFT 1108-C—Blueprint Reading
A general course in interpreting blueprints. Analysis of electrical and pneumatic systems will be emphasized. Mechanical devices including piping, machines, gears, and system color coding will be introduced.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: DFT 1104

DFT 1109—Blueprint Reading
A general course in interpretation of blueprints. Analysis of electrical and plumbing systems will be emphasized. Mechanical devices including heat and air, insulation, structure design, and system color coding will be introduced.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: DFT 1104

DFT 1110—Building Trades Blueprint Reading and Sketching
Principles of interpreting blueprints and trade specifications common to the building trades. Development of proficiency in making three-view and pictorial sketches.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

DFT 1111—Machine Trades Blueprint Reading and Sketching
Interpretation and reading of machine blueprints. Information on the basic principles of the blueprint: lines, views, dimensioning procedures and notes.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

DFT 1112—Blueprint Reading: Welding
A thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

DFT 1113—Blueprint Reading: Building Trades
Emphasis shall be placed upon reading and understanding all aspects of actual blueprints and the interpretation expected by the architect. Dimensions, symbols, special specifications, etc. are to be emphasized in this course.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

DFT 1116-C—Blueprint Reading: Air Conditioning
A specialized course in drafting for the Air Conditioning, Heating, and Refrigeration student. Emphasis will be placed on reading of blueprints that are common to the trade; and blueprints of mechanical components, assembly drawings, wiring diagrams and schematics, floor plans, heating system plans, including duct and equipment layout plans, and shop sketches. The student will make tracings of floor plans and layout air conditioning systems.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: DFT 1104-C

DFT 1117-C—Blueprint Reading: Welding
This is a continuation of DFT 1112 which embodies a thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications will also be studied.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None

DFT 1119—Pattern Development and Sketching
This course is designed for the student who has the basic knowledge of blueprint reading and sketching. It presents the practical shop or field layout methods used by pipe welders. Layouts are made on templet paper beginning with the simple plan and progressing to the most complex lateral connections that are used in industrial pipings. The student learns the steps in making rectangular and cylindrical layouts and patterns of offsets and intersections used on commercial jobs.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: None

DFT 1120—Blueprint Reading of Pipe Drawings and Pipe Sketchings
Basic principles and methods of reading; reading and dimensioning pipe drawings with emphasis on piping relating to welders.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None.

DFT 1127—Marine Drafting I
The course involves use of standard drafting tools and techniques to illustrate the lines of a boat using orthographic projection.
Course Hours Per Week: Class 5, M. Lab 3. Quarter Hours Credit 6.
Prerequisite: None

EDU 1006—Language Arts in Early Childhood
This course will be a study of the four language arts — Reading, Speaking, Listening, and Printscript — and comparison of current methods and materials as it relates to the language arts. Students will be required to work in a day-care center ten (10) hours per week to satisfy the practicum portion of this course. At this time, they will be expected to practice the skills being taught in class.
Course Hours Per Week: Class 1, Lab 2, Practicum 10. Quarter Hours Credit 3.
Prerequisite: None

EDU 1009—Art in the Early Childhood Programs
This course provides a study of art media in relation to the creative processes in young children. Art concepts are presented and reinforced by the use of a variety of low-cost materials which are easily incorporated into a program for young children. Laboratory sessions provide first-hand experiences in creative art using all media, practice in the care and storage of materials, and developing a file of art ideas. Each student will plan art activities for the various age groups. Students will be required to work in a day-care center ten (10) hours per week to satisfy the practicum portion of this course. At this time, they will be expected to practice the skills being taught in class.
Course Hours Per Week: Class 1, Lab 2, Practicum 10. Quarter Hours Credit 3.
Prerequisite: None

EDU 1022—Math, Science, and Social Studies for Young Children
The student will be able to select activities and materials for developing math and science experiences for young children. They will learn how to assist the child in manipulating, experimenting, and discovering basic number and science concepts. Social studies will focus on the immediate environment and experiences of the child. Emphasis is placed on the content areas of sociology, history, economics, political science, and geography.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDU 1101—Child Growth and Development (Infant-Toddler 0-36 months)
This course will study the development from birth to age three and study the problems specific to group care of children 36 months and younger. Each student will develop a plan of care for a group of children; the plan must reflect concern for the child's total development and show procedures for dealing with the practical problems of providing safe care for children 0-36 months.
Course Hours Per Week: Class 1, Lab 2, Practicum 10. Quarter Hours Credit 3.
Prerequisite: None

EDU 1102—Child Growth and Development (Preschool 2-5 years)
This course deals with the developmental sequence of preschool aged children (2-5). This age group will be examined in depth with emphasis being given to factors influencing development. Activities appropriate for children at each level of development will be discussed and wherever possible practical application used. The study of an individual child will be an integral part of the course.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDU 1103—Music and Integrated Activities
This course is designed to develop an awareness of the fundamentals of music; skill in utilizing a wide variety of materials for rhythm, singing and instrumental performance; and use of creative movement and music for emotional expression and learning.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: None

EDU 1105—Health, Safety, and Nutrition for Young Children
This course is designed to promote an understanding of factors which influence physical and emotional health and nutrition during infancy and childhood. Classroom activities focus on practices and procedures for promoting good health, safety, and nutrition among children in group care. The influence of child care workers on health, safety, and nutrition in a group care situation is emphasized throughout the course.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDU 1111—Communicating Effectively with Young Children (Interpersonal Skills, Staff, Parents, Children Discipline and Behavior Management)
This course is a study in interpersonal communication between the child care worker, parents, other staff, and children. The student will acquire the abilities of speaking openly and frankly without alienating. Being a skillful listener, receiving and accepting suggestions, giving additional insights, and communication techniques will be studied in this course.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDU 1130—Introduction to Preschool Education
This course will cover the philosophy of early childhood education, the types of experiences, facilities, and media which will promote optimal development of each child. Licensing and Approval Standards will be explored. Opportunities to compare a variety of early childhood programs will be provided.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EDU 1138—Program Planning for Infants and Toddlers
This course is designed to provide students with an awareness of basic principles of early childhood education and trends from theory, practice, and research that have contributed to the development of programs for infants and toddlers; programming approaches used in day-cares; and organized collection of development concepts specific for programmers, teacher, and caregiver roles; behavioral descriptions; suggestions for settings and activities from which the teacher-caregiver can select and learn; infant/toddler programming issues and problems; and features from a variety of infant/toddler program models. To fulfill the ten (10) hours per week practicum requirement, students must work in a day-care center practicing the skills being taught during class time.
Course Hours Per Week: Class 1, Lab 2, Practicum 10. Quarter Hours Credit 3.
Prerequisite: None

EDU 1148—Infant-Toddler Care
This course provides a study of techniques and problems specific to the care and guidance of infants and toddlers. The provision of consistent, nurturing care, appropriate stimulation, and arrangement of the environment will also be addressed.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

EGY 1101—Introduction to Solar Energy Systems
The basic theory and current state of the art of solar energy usage in residential, commercial, and industrial heating, cooling, and hot water. Basic concepts of solar radiation, thermodynamics, and heat transfer will be introduced. Laboratory will include hands-on testing and performance measurement of solar equipment and systems.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisites: AHR 1116, ELC 1102-C, DFT 1104-C, AHR 1121-C.

ELC 1102-C—Applied Electricity—Part I
Introduction to basic theories and principles of electricity. Basic electric control circuits, Ohm's Law, series and parallel circuits.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

ELC 1103-C—Applied Electricity—Part II
The use and care of test instruments and equipment used in servicing electrical apparatus for air conditioning and refrigeration installations. Electrical principles and procedures for trouble-shooting of the various electrical devices used in air conditioning, heating, and refrigeration equipment. Included will be tranformers, various types of motors and starting devices, switches, electrical heating devices, and wiring.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: ELC 1102-C

ELC 1104—Basic Electricity I
This course gives an introduction to basic theories and principles of electricity, as well as to basic electric units, symbols, and Ohm's Law regarding series and parallel circuits.
Course Hours Per Week: Class 5, M. Lab 9. Quarter Hours Credit 8.
Prerequisite: None

ELC 1104-C—Basic Electricity I
This course is an introduction to basic principles of electricity, basic electric units and symbols, Ohm's Law, and the use of electrical measuring instruments. This course is not as in-depth as ELC 1104, Basic Electricity.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

ELC 1105—Basic Electricity II
This course gives an introduction to alternating current theory, sine wave generation and analysis, induction, reactance, impedance, phase relations, transformers, and power factor corrections.
Course Hours Per Week: Class 5, M. Lab 9. Quarter Hours Credit 8.
Prerequisite: ELC 1104

ELC 1106—Practical Marine Electricity I
This course offers the student basic instruction in electricity and its practical application as used aboard modern seagoing vessels.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: None

ELC 1106-C—Practical Marine Electricity
An understanding of the basic 12-volt (DC) direct current electrical system from boat batteries. The (AC) alternating current system which is on some small vessels is also discussed. The installation and wiring of the various lights, electrical instruments, and electric motors on a boat is studied in great detail. Safety is stressed throughout the course.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

ELC 1107—Practical Marine Electricity II
Operation, maintenance, and repair of ship's generators including transfer of power and phasing is studied in this course. The student will study ship's wiring from distribution boards to equipment and lights, etc.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: ELC 1106

ELC 1108—Practical Marine Electricity III
A continuation of Electricity II. The electrical circuits of the ship's gyro system and repeaters are covered at this time. Other complex electrical systems and circuits are discussed. Again, the emphasis in this course is on the practical application with students involved in trouble-shooting techniques and electrical repair skills.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: ELC 1107

ELC 1109—Electrical Wiring
This course gives an introduction to basic theories and principles of electricity, as well as basic units, symbols, and Ohm's Law regarding series and parallel circuits. The course also gives a basic principle of residential and commercial wiring according to National Electrical Codes and area building codes.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

ELC 1111—Direct and Alternating Electricity
This course provides a thorough study of the electrical system of the equipment powered by gas and diesel engines. Battery cranking mechanisms, generators and alternators, ignition systems, accessories and wiring special tools, and use of testing equipment for electrical systems are covered.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

ELC 1115—AC and DC Machinery
AC and DC motors, generators, voltage and current regulators, speed control, reversing and braking systems, and characteristics are studied. The student will physically set up and wire various systems and then collect data to determine characteristics and efficiency of system.
Course Hours Per Week: Class 4, M. Lab 9. Quarter Hours Credit 7.
Prerequisite: ELC 1104

ELC 1116—Motor Control
Introduction to control components, i.e., contractors, motor starters, pilot devices, code considerations, types of control, control circuits, analysis of control circuits, maintenance and trouble-shooting of motor, and control circuits including solid state.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: ELN 1111

ELC 1117-C—Industrial AC Motors and Controls
This course will cover the fundamental concepts in single and polyphase circuits, machines, and controls. Instruction in the use of electrical test equipment in circuit analysis and trouble-shooting will be given with practice in wiring electrical motors and motor control centers. Emphasis on OSHA safety regulations in the field of industrial electricity will also be given.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: ELC 1104-C

ELC 1125—Industrial Wiring Practices
Wiring methods in industrial complexes are covered, including wire sizing, splicing, and code. Raceways, wireways, and duct systems are introduced. Accepted methods of wiring motors, motor starters, relays, and transformers are emphasized.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisite: ELC 1111

ELN 1106—Instrument Familiarization
Functional use of various tools and test equipment used in the electrical field.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: None

ELN 1111—Electro-Mechanical Relays and Symbols
Introduction to various types of relays (AC and DC), operating principles and characteristics. Various relay symbols are introduced. Maintenance and construction of relays are studied.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: ELN 1106

ELN 1130—Solid State Devices, Circuits and Symbols
Introduction to the theory and applications of solid state devices used in industry, especially solid state control circuits, for motors and related equipment. Basic transistor circuits, vacuum tubes, and basic vacuum tube circuits are covered.
Course Hours Per Week: Class 5, M. Lab 6. Quarter Hours Credit 7.
Prerequisite: ELC 1105, DFT 1104, ELN 1111

ENG 1101-C—Communication Skills
This course covers the basics of communication and their application to on-the-job activities. The student is introduced to memos, work estimates and orders, necessary forms and records, and the writing of effective letters. Emphasis is placed on descriptions and giving directions.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

ENG 1102-C—Communication Skills
This course covers the task skills applied in job acquisition, such as writing resumes, applications, and related letters, as well as arranging and conducting a successful interview. It also covers visualizing concepts and data, finding references through Library Information Systems, taking notes, organizing, writing, and presenting orally a report related to the students field of study.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: ENG 1101-C

ENG 1103—Grammar
This course will offer the student an opportunity to learn parts of speech, sentence structure, and paragraph formation, which will assist in improving communication and writing skills.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

MAS 1101-C—Masonry
The history of the bricklaying and the masonry industry, raw materials, terminology, clay and shell brick, concrete block, mortar, laying foundations, cutting masonry materials, bonding, and the use, care, and maintenance of tools will be covered. Practice is given in selecting the proper mortars, layout, and construction of various building elements using brick and concrete block in order to develop skills in these areas.
Course Hours Per Week: Class 5, M. Lab 15. Quarter Hours Credit 10.
Prerequisite: None

MAT 1101-C—Trade Mathematics
This course is designed to enhance the mathematical capabilities of each student. The general context of the course will be the coverage of the four basic operations working in the areas of whole numbers, common fractions, and decimals. The principles of prime numbers, dimensional analysis, percentages, ratios and proportions will also be covered. The course endeavors to use practical problems where possible.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: None

MAT 1102-C—Trade Mathematics
This course further enhances the mathematical capabilities of the student through the study of powers and roots of numbers, solutions and manipulations of formulas, first and second degree equations, linear measure, areas and volumes of regular geometric figures. Practical word problems are used in all areas of study where applicable.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 1101-C

MAT 1122—Machinists' Mathematics I
This course is designed to acquaint the machinist with the mathematical tools most useful to the trade. The areas of Metric Measurement, Ratio and Proportion, Basic Trigonometry, and Fundamental Geometry are utilized in the light of practical machine trade problems.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 1102-C

MAT 1123—Machinists' Mathematics II
This is the second of two mathematics courses designed to acquaint the machinist with the mathematical tools most useful to the trade. The course will enhance the topics of the first course. The content herein will also cover the topics of indexing Helix angles, angle measuring of various types, cutting speeds, plus some time in numerical control familiarization.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 1122

MAT 1125—Industrial Calculations
This course is designed to improve the Industrial Electricity student's ability to solve problems relating to his or her field. Topics covered will include a review of series, parallel and combination circuits, power wire sizes, and lines losses. Also included will be mathematics related to alternating current fundamentals including square root, Pythagorean Theorem, and practical trigonometry. Specific problems related to the electrical code book will also be discussed when applicable.
Course Hours Per Week: Class 5. Quarter Hours Credit 5.
Prerequisite: MAT 1101

MDE 1101—Marine and Diesel Engines Theory and Practice I
This course covers the principles of main propulsion of vessels, heavy equipment, and trucks employing internal combustion engines. Construction and various designs of the operational principles of two- and four-cycle internal combustion engines and their related piping systems, cooling, and lubrication are covered. Also, procedures for "lighting off" will be covered.
Course Hours Per Week: Class 4, M. Lab 15. Quarter Hours Credit 9.
Prerequisite: None

MDE 1102—Marine and Diesel Engines Theory and Practice II
This course deals with two-cycle diesel engines that are used for propulsion of vessels and heavy equipment and trucks. In the construction and design of various two-cycle engines and their related system, cooling, lubrication, and air intake systems are covered. Procedure for "lighting off" and preventive maintenance will be discussed.
Course Hours Per Week: Class 3, M. Lab 12. Quarter Hours Credit 7.
Prerequisite: None

MDE 1103—Marine and Diesel Engines Theory and Practice III
This course deals with the administration of gasoline and diesel engineering plants through the recording and filing of performance data. The course is also a continuation of two- and four-cycle engines, and rebuilding, which includes preventive maintenance and periodic checks of diesel engines. This course will cover in great detail trouble-shooting of two- and four-cycle engines.
Course Hours Per Week: Class 3, M. Lab 15. Quarter Hours Credit 8.
Prerequisite: None

MDE 1104—Marine and Diesel Power-Train Systems I
This course is a study of principles and functions of Marine and Diesel Power-Train Systems and disassembly and assembly of clutches, torque converters, torque dividers, fluid couplings, manual transmissions, planetary systems, and automatic transmissions.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MDE 1105—Marine and Diesel Power-Train Systems II
This course is a study of principles and functions of Marine and Diesel Power-Train Systems and disassembly and assembly of marine gears, drive lines, final drives, differentials, and rear axles.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MDE 1108—Gas and Diesel Fuel Systems I
This course provides a thorough study of the fuel systems of the marine and diesel engines, fuel pumps, carburetors, fuel injection pumps, and air intake systems. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel systems of marine and diesel engines are studied.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MDE 1109—Gas and Diesel Fuel Systems II
A continuation of the study of fuel systems injection pumps. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel systems of marine and diesel engines will be covered.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

MEC 1101—Machine Shop Theory and Practice
An introduction to the machinist trade and the potential it holds for craftsmen. Deals primarily with the identification, care, and use of basic hand tools and precision-measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice.
Course Hours Per Week: Class 3, M. Lab 15. Quarter Hours Credit 8.
Prerequisite: None

MEC 1102—Machine Shop Theory and Practice
Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine, and shaper. The student will be introduced to the basic operations on the cylindrical grinder and will select projects encompassing all the operations, tools, and procedures thus far used and those to be stressed throughout the course.
Course Hours Per Week: Class 3, M. Lab 15. Quarter Hours Credit 8.
Prerequisite: MEC 1101

MEC 1103—Machine Shop Theory and Practice
Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder. Also, introduction to C.N.C. programming for turning and milling with digital readouts.
Course Hours Per Week: Class 3, M. Lab 15. Quarter Hours Credit 8.
Prerequisite: MEC 1102

MEC 1104—Machine Shop Theory and Practice
Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly, and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully, and establishing of good work habits and attitudes acceptable to the industry. Fundamentals in computer-controlled machine tool programs, operation, and setup.
Course Hours Per Week: Class 4, M. Lab 12. Quarter Hours Credit 8.
Prerequisite: MEC 1103

MEC 1109—Computer Controlled Machine Tools
An introduction to computerized numerical controlled machine tools. Deals primarily with numerical control and computerized numerical control machine tools as used in modern industry. The student will be introduced to simple part programs, setups, and operation of the computerized numerical control lathes and mills.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: MEC 1102 or Permission of Instructor

MEC 1115-C—Applied Metallurgy
This course investigates the properties of ferrous metals (steels and cast irons) and tests to determine their uses. Instruction will include methods of changing physical characteristics and properties, production of iron and steel, and methods of shaping and forming.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

MEC 1121—Industrial Hydraulics I
This course covers the fundamentals of hydraulics and its uses in industry. A study of power transmission through hydraulics, the course will cover components and their function, pumps (gears and vanes), cylinders, and control valves.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MEC 1122—Industrial Hydraulics II
A continuation of MEC 1121, this course will cover industrial hydraulic circuits and components including governors, valve control, and instrument control in detail.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: MEC 1121

MEC 1127—Industrial Mechanics I
This course is an introduction to the nature of work required of an industrial maintenance mechanic and his role in industry. It will deal with the identification, care, and use of basic hand tools used by a maintenance mechanic, including portable power tools and measuring devices. Also included are special tools and holding devices, methods of layout and fabrication, and threading and tapping. Benchwork such as filing, shaping, and forming metal parts will be practiced. OSHA standards will be stressed and will involve good housekeeping and shop safety.
Course Hours Per Week: Class 5, M. Lab 9. Quarter Hours Credit 8.
Prerequisite: None

MEC 1128—Industrial Mechanics II
This course is a study of the various types of industrial piping systems and plumbing fixtures. It will cover types of pipe and fittings, methods of installation and repair, and include threading and pipefitting. Valves and other plumbing fixtures will be covered with emphasis on installation service and repair of existing systems.
Course Hours Per Week: Class 5, M. Lab 9. Quarter Hours Credit 8.
Prerequisite: None

MEC 1129—Industrial Mechanics III
This course will cover the installation, repair, and servicing of mechanical power transmission equipment, including gears, belts, and roller chains. Basic rigging procedures and use of jacks, chain falls, and floor lifts will be covered. Emphasis will be on trouble-shooting and routine maintenance tasks normally performed by the industrial mechanic.
Course Hours Per Week: Class 5, M. Lab 9. Quarter Hours Credit 8.
Prerequisite: None

MEC 1130—Industrial Mechanics IV
This course will cover centrifugal and positive displacement type pumps and their principles of operation and theory. Training in assembly, parts replacement, packing and mechanical seal installation will be covered. Emphasis will be placed on motor pump alignment.
Course Hours Per Week: Class 6, M. Lab 12. Quarter Hours Credit 10.
Prerequisites: MEC 1127, DFT 1104

MRO 1101—Rules of the Road and Piloting
This course is a study of basic piloting techniques to enable the student to navigate a vessel using aids to navigation, charts, instruments, and nautical publications. A thorough coverage of the nautical "rules of the road" for preventing collisions is also presented.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: None

MRO 1102—Electronic Aids to Navigation
This course provides the student with information on the operations concepts and capabilities of shipboard electronic equipment used for navigation, communication, oceanography, and fishery operations. Topics include: RADIO WAVE theory, LORAN Omega, satellite navigation direction finding, gyrocompass, depth finding, and marine radio communications.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MRO 1106—Practical Marine Engineering I
The student will learn basic theory of engines and hydraulics through lectures and lab work. Also, he will become familiar with watchstanding in the engine department and the operation of deck equipment. On cruises he or she will perform the duties of the watch, plus under close supervision, he or she will operate the winches for setting and hauling nets.
Course Hours Per Week: Class 1, Lab 4. Quarter Hours Credit 3.
Prerequisite: None

MRO 1107—Practical Marine Engineering II
The student will learn in detail the internal working of high and medium speed diesel engines. The repair of hydraulic systems will also be covered. The student will receive an introduction to refrigeration. More responsibility will be assumed by the student during his or her engineering watches.
Course Hours Per Week: Class 2, Lab 4. Quarter Hours Credit 4.
Prerequisite: None

MRO 1108—Practical Marine Engineering III
The student will learn the maintenance and repair of refrigeration equipment. The design of hydraulic systems will be covered and through field trips he or she will see how the systems work on local fishing vessels. Also, vessel haul out will be covered by classroom work and trips to marine railway to view actual work being done.
Course Hours Per Week: Class 1, Lab 2. Quarter Hours Credit 2.
Prerequisite: MRO 1107

MRO 1109—Practical Marine Engineering IV
A detailed review of previous courses in marine engineering. Preventive maintenance, use of the engine room log, and the need for specialized math will be covered. The student (if capable) will stand watches and operate deck equipment under limited supervision. Also matching engine gear propeller to use will be discussed.
Course Hours Per Week: Class 2, M. Lab 4. Quarter Hours Credit 4.
Prerequisite: MRO 1108

MRO 1115—Towboat Operations
A comprehensive study by theoretical and practical means of methods employed by towing vessels in ocean and inland towing. Subject material will include the following: towing astern and alongside, pushing ahead, docking tugs, making and breaking the tow, applicable navigation rules, salvage and rescue work, and multiple tows.
Course Hours Per Week: Class 2, M. Lab 6. Quarter Hours Credit 4.
Prerequisite: None

MRO 1118—Marine Fiberglassing
This course will introduce the student to the techniques employed in the manufacture and repair of fiberglass boats. The study of the proper mixing of the resins and solvents will be emphasized. Various methods of framing used in fiberglass boat construction will be taught as well as the many methods of "laying up" the matting. The student is further instructed in the use of all the tools and equipment associated with fiberglass boat construction.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None

MRO 1139—Rigging and Seamanship
Fibers, synthetics, and wire ropes are studied with emphasis on strength, proper handling, and storage. The types of splicing used in fiber and wire slings will be demonstrated. Block and tackle combinations and mathematical formulas used to lift given weights will be taught in this course.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MRO 1140—Marine Safety-First Aid, Lifeboat Drills, and Firefighting Aboard ship
A presentation of essential elements of ship safety covering firefighting, first aid, accident prevention, abandon ship procedures, lifesaving, and survival at sea. Emphasis is placed on emergency drills and adherance to U.S. Coast Guard regulations.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

MSC 1110—Boat Building I
The course is designed to introduce tools and woodworking techniques to students having little if any previous experience. Fundamentals of a well- organized boat building shop with regard to safety and efficiency will be stressed.
Course Hours Per Week: Class 11, M. Lab 6. Quarter Hours Credit 13.
Prerequisite: None

MSC 1111—Boat Building II
The course is designed to prepare the student in boat construction. Emphasis on lofting, moldmaking, pattern making, setup, plank spiling, and use of wood and bedding compounds will be presented.
Course Hours Per Week: Class 9, M. Lab 9. Quarter Hours Credit 12.
Prerequisite: MSC 1110

MSC 1112—Boat Building III
The course is an extension of the boat building process to the point of finishing the boat. It will include preparing surfaces for applying paint and other finishes including varnish and oil.
Course Hours Per Week: Class 9, M. Lab 12. Quarter Hours Credit 13.
Prerequisite: MSC 1111

MSC 1114—Marine Fishery Science and Seafood Handling
This course involves study of identification and classification of commercial marine fishes. General understanding of life cycles, population changes, and distributions as influenced by environmental factors. Additional study will be given in fish identification and fish tagging methods with an introduction to aquaculture and controlled rearing of commercially important marine species as a profitable business. Description of fisheries, fishing methods, fishing equipment, and methods of fish preservation will be covered.
Course Hours Per Week: Class 2, Lab 2. Quarter Hours Credit 3.
Prerequisite: None

MSC 1117—Advanced Lofting
A comprehensive course in lofting that uses involved techniques to lay down the lines of round bottom craft. The many important aspects the course will cover are: view comparisons, picking up bevels and patterns, obtaining shapes of floors and bulkheads, and curved raked transom expansion and sections through the stem.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: MSC 1110 or Qualification by Instructor

MSC 1118—Spar Making
Wooden spar or mast construction can take various forms. The types described and built will include round, hollow core, and box section.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: MSC 1110 or Qualification by Instructor

MSC 1119—Lamination Techniques
An important aspect of today's boat building methods are efficient use of lumber and materials. Laminated wood makes for better efficiency. The course will clearly demonstrate the use of the many adhesives designed for wood. Use of moisture meters and steam bending will be discussed.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisites: MSC 1110 and Discretion of Instructor

MSC 1120—Lapstrake Construction
A brief but comprehensive course which teaches the fundamentals of lapstrake construction, using jigs to accommodate the concept. Rivet and clench nail installation will also be taught.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: MSC 1111 or Qualification by Instructor

MSC 1141—Navigation
An advanced navigation course to expand on material covered in MRO 1101. Topics to include: use of the maneuvering board for collision avoidance, an introduction to celestial navigation, calculator navigation, voyage planning, fuel consumption, and advanced piloting techniques.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisiste: MRO 1101

NUR 1101—Nursing Skills
The course has been developed to introduce the student to basic nursing skills, nursing procedures, and nursing care. Beginning skills are developed through planned laboratory experiences, hypothetical patient situations, followed by related practice in actual patient care.
Course Hours Per Week: Class 4, Lab 2, Clinical 3. Quarter Hours Credit 6.
Prerequisite: None

NUR 1102—Medical-Surgical Nursing I
This course has been developed to help the student analyze nursing needs of patients. Needs arising from the individuality of the patient and from the illness condition are evaluated. Related information is presented as it is relevant to the student's understanding of and ability to meet nursing needs of patients. Clinical activities provide selected experiences in patient care in order for the student to develop skill in applying classroom learning to a variety of patient situations.
Course Hours Per Week: Class 5, Lab 2, Clinical 6. Quarter Hours Credit 8.
Prerequisites: BIO 1001, BIO 1002, ENG 1103, NUR 1101, NUT 1101, PSY 1101

NUR 1103—Pediatrics
This course is designed to include two parts. Part I was developed to give the student an understanding of many of the common illnesses of children, and Part II was designed to help the student understand the needs of the acutely ill child, including the abused child, the child with burns, the child with fractures, and the child with acute or chronic poisoning problems. Clinical activities are provided in order for the student to develop skill in caring for the sick child.
Course Hours Per Week: Class 5, Clinical 9. Quarter Hours Credit 8.
Prerequisites: BIO 1001, BIO 1002, ENG 1103, NUR 1101, NUT 1101, PSY 1101

NUR 1104—Obstetrics
This course has been developed to give the student an understanding of the fundamentals of maternity nursing. The student will be expected to review normal anatomy and physiology of the reproductive system as well as the other systems that play roles in obstetric nursing. The student will have an opportunity to assist with prenatal visits, observe in labor and delivery, participate in caring for mothers and babies in a modified rooming-in situation, and observe in the special care nursery. Selected clinical experiences will enable the student to better apply classroom learning.
Course Hours Per Week: Class 6, Clinical 12. Quarter Hours Credit 10.
Prerequisites: BIO 1001, BIO 1002, ENG 1103, NUR 1101, NUT 1101, PSY 1101

NUR 1105—Pharmacology
This course is designed to assist the student in learning how to give medications safely. Care will be given in teaching conversion methods using household, apothecary, and metric measurements. Basic skills will be taught in administering medications. Demonstrations by instructors and return demonstrations by students will be done in a lab facility. Information related to medications and their use with specific illnesses will be given and the student will apply this knowledge when giving patient care.
Course Hours Per Week: Class 5, Lab 2, Clinical 6. Quarter Hours Credit 8.
Prerequisites: BIO 1001, BIO 1002, ENG 1103, NUR 1101, NUT 1101, PSY 1101

NUR 1106—Medical-Surgical II
This course has been designed to assist the student in acquiring knowledge of common disease conditions and in developing beginning safe and effective nursing care to patients with specific needs arising from illness and/or therapy. The content of the course spans two quarters so that the student will have ample time for clinical experiences in nursing patients with conditions which illustrate classroom learning. The grade for this course will be given at the end of the fourth quarter.
Course Hours Per Week: Class 7, Lab 2, Clinical 9. Quarter Hours Credit 11.
Prerequisites: BIO 1001, BIO 1002, ENG 1103, NUR 1101, NUT 1101, PSY 1101

NUR 1107—Medical-Surgical Nursing III
This course is designed to assist the advanced practical nursing student to acquire knowledge of the needs of the seriously ill patient and to develop skills in assisting the registered nurse and/or the doctor in complex nursing situations. The student will also be assisted in making the transition to the role to be assumed after graduation. Clinical activities will consist of selected experiences with the seriously ill patient, and overview of community nursing with the public health nurse, a first aid course, and emergency room nursing.
Course Hours Per Week: Class 4, Clinical 6. Quarter Hours Credit 6.
Prerequisites: BIO 1001, BIO 1002, ENG 1103, NUR 1101, NUT 1101, PSY 1101

NUT 1101—Nutrition and Diet Therapy
This course has been developed to introduce the student to normal nutrition and to the diets used in the care of patients. The course begins with an in-depth study of the digestive system. A thorough view of all the nutrients with emphasis placed on food sources is given. Therapeutic diets that are most often used for specific conditions are also discussed. The student is expected to visit a grocery store and price various staple goods and then plan a menu for a family. Throughout the year, diet therapy continues to be stressed in patient care.
Course Hours Per Week: Class 4. Quarter Hours Credit 4.
Prerequisite: None

PHY 1101—Applied Science
This course is an introductory study of the properties of materials and the principles of electricity and magnetism. Topics included are measurement, solids, liquids, gases, electric circuits, electromagnetism, simple machines and systems of measurement. This course is a lab course to furnish hands-on experience.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: None

PHY 1101-C—Applied Science
This course is an introductory study of the properties of materials and the principles of electricity and magnetism. Topics included are measurement, solids, liquids, gases, electric circuits, electromagnetism, simple machines and systems of measurement.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

PHY 1102-C—Applied Science
A continuation of PHY 1101-C, this course views the simple machines along with power, energy, motion, and mechanical advantage. This is a lecture and lab course mainly designed for mechanical emphasis.
Course Hours Per Week: Class 3, Lab 2. Quarter Hours Credit 4.
Prerequisite: PHY 1101-C

PLU 1101—Basic Plumbing
This course is designed for the Light Construction curriculum and is a study of the various types of residential piping systems and plumbing fixtures. It will cover types of pipe and fittings, methods of installation and repair, and include threading and pipefitting. Valves and other plumbing fixtures will be covered with emphasis on installation service and repair of existing systems.
Course Hours Per Week: Class 2, M. Lab 3. Quarter Hours Credit 3.
Prerequisite: None

PME 1101—Internal Combustion Engines
This course promotes the development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. It includes a study of the construction and operation of components of internal combustion engines, as well as the testing of engine performance, servicing and maintenance of pistons, valves, cams and camshafts, fuel and exhaust systems, cooling systems, proper lubrication, and methods of testing, diagnosing and repairing.
Course Hours Per Week: Class 3, M. Lab 15. Quarter Hours Credit 8.
Prerequisite: None

PME 1102—Engine Electrical and Fuel Systems
A thorough study of the electrical and fuel systems of the automobile is made, including battery cranking mechanism, generator, ignition, accessories, wiring, fuel pumps, carburetors, and fuel injectors. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel and electrical system are also covered.
Course Hours Per Week: Class 5, M. Lab 15. Quarter Hours Credit 10.
Prerequisite: None

PME 1131—Schematics and Diagrams: Marine and Diesel
This course covers the interpretation and reading of blueprints. It promotes the development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on lines, views, dimensioning procedures, and notes will be covered.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

PME 1136—Fundamentals of Hydraulics
The fundamentals of hydraulics and its use to transmit power are studied, including the following components and their function; pumps, lines, cylinders, valves, gauges, and controls. Proper care, use, installation and storage of test equipment, minor repairs, assembly, removal and replacement of equipment are also covered.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: None

PSY 1101—Human Relations
This is a study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships within the work situation.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: None

PSY 1101-C—Human Relations
This is an introductory course which covers the basic principles of human relations. It will provide instruction in human relation skills and competencies as they apply to man's social behavior in the community and workplace.
Course Hours Per Week: Class 2. Quarter Hours Credit 2.
Prerequisite: None

PSY 1102—Growth and Development
This course has been designed to give the student a thorough understanding of normal growth and development including the ages and stages of personality development. The student will have an opportunity to view normal growth and development in the community by visiting a day-care center and nursing homes.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisites: BIO 1001, BIO 1002, ENG 1102, NUR 1101, NUT 1101, PSY 1101

SHI 1101—Ships' Equipment, Maintenance, and Repair I
This course will include the actual experience and instruction on maintenance and repairing of equipment used in marine environment.
Course Hours Per Week: Class 3, M. Lab 6. Quarter Hours Credit 5.
Prerequisite: None

SHI 1102—Ships' Equipment, Maintenance, and Repair II
This course covers in more detail than SHI 1101, the theory and practice of marine equipment maintenance. Subject material will include paints and painting, canvas work, ground tackle, and steering gear. There will be continuous practice in the operation of the school's fleet of small vessels.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisite: SHI 1101

SHI 1103—Ships' Equipment, Maintenance, and Repair III
More detailed aspects of the practice of marine equipment maintenance are covered in this course. Topics include ship sanitation, deck machinery maintenance, specialized marlinspike seamanship, boat hull repair, and special considerations for the tankerman. Operation of the small vessel fleet will continue with emphasis on boat handling in non-routine situations.
Course Hours Per Week: Class 2, M. Lab 6. Quarter Hours Credit 4.
Prerequisite: SHI 1102

SHI 1104—Ships' Equipment, Maintenance, and Repair IV
The ultimate consideration in ship maintenance is the preservation of watertight integrity. This course probes the critical subject of ship stability, a responsibility normally assigned to an officer. Also, the student will learn damage control measures such as shoring, emergency pumping, jettisoning of cargo, and suppression of free surface. Operation of the small vessel fleet will continue with emphasis on boat handling in emergency situations.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisite: SHI 1103

WLD 1101—Basic Welding
Welding demonstrations by the instructor and practiced by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for arc welding and flame-cutting methods applicable to mechanical repair work.
Course Hours Per Week: Class 1, M. Lab 3. Quarter Hours Credit 2.
Prerequisite: None

WLD 1101-C—Basic Welding
Welding demonstrations by the instructor and practiced by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for arc welding and flame-cutting methods applicable to mechanical repair work.
Course Hours Per Week: M. Lab 3. Quarter Hours Credit 1.
Prerequisite: None

WLD 1106—Welding and Burning I
This course involves welding demonstrations by the instructor and practiced by students in the welding shop. The metallurgy of welding is discussed, as are safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding and flame-cutting. Emphasis is placed on electric arc and gas welding methods applicable to mechanical repair work. Brazing is also covered.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: None

WLD 1107—Welding and Burning II
This course is a continuation of WLD 1106, giving the students additional practice in arc welding which will improve their efficiency as a welder. Emphasis will be on safety and use of arc and gas welding equipment. Practice will include oxyacetylene welding, brazing, soft solder and silver solder as needed in mechanical, ship and dock repair work. Also, there will be a demonstration, by instructor, of Tig, Mig, and Plasma welding.
Course Hours Per Week: M. Lab 6. Quarter Hours Credit 2.
Prerequisite: WLD 1106

WLD 1119—Basic Arc Welding and Oxy-fuel Cutting
The operation of the different types of AC & DC welding machines, and maintenance of welding machines. Studies are made on welding heats, polarities, and different types of welding electrodes used in joining various types of metals in the arc welding process. The set up and use of oxy-fuel cutting equipment. After the student is capable of setting up welding equipment, practice weld beads will be made in all positions. Safety procedures are emphasized throughout the course in the use of tools and equipment.
Course Hours Per Week: Class 6, M. Lab 9. Quarter Hours Credit 9.
Prerequisite: None

WLD 1122—Commercial and Industrial Practices
Designed to build skills through practices in simulated industrial processes and techniques: sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding, and nondestructive testing and inspection.
Course Hours Per Week: Class 3. Quarter Hours Credit 3.
Prerequisite: WLD 1119 or WLD 1127

WLD 1123—Inert Gas Welding (Tig, Mig, and Plasma)
Introduction and practical operations in the use of inert gas arc welding. A study will be made of the equipment, operation, safety, and practice in the various positions. A thorough study of such topics as principles of operation, shielding gases, filler rods, process variations and applications, and manual and automatic welding.
Course Hours Per Week: Class 6, M. Lab 6. Quarter Hours Credit 8.
Prerequisite: WLD 1119 or WLD 1127

WLD 1124—Pipe Welding
Designed to provide practice in the welding of pressure piping in the horizontal, vertical and horizontal-fixed position using shielded metal arc welding processes according to Sections VIII and IX of the ASME code.
Course Hours Per Week: Class 4, M. Lab 6. Quarter Hours Credit 6.
Prerequisites: WLD 1122, WLD 1123

WLD 1125—Certification Practices
This course involves practice in welding the various materials to meet certification standards. The student uses various tests including the guided bend and the tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds.
Course Hours Per Week: Class 3, M. Lab 3. Quarter Hours Credit 4.
Prerequisites: WLD 1122, WLD 1123

WLD 1127—Advanced Arc Welding
This course will be a continuation of WLD 1119 in order to give the student additional practice in welding plate steel of all thickness and in all positions to A.W.S. Codes. All safety procedures will be emphasized throughout the course. This course will enable the student to be better prepared to pass welding tests in industry and become a certified welder.
Course Hours Per Week: Class 6, M. Lab 9. Quarter Hours Credit 9.
Prerequisite: WLD 1119

CONTINUING EDUCATION
NEW INDUSTRY TRAINING
PROGRAMMED INSTRUCTION
CENTER

CONTINUING EDUCATION

Cape Fear Technical Institute provides training in numerous areas through its Continuing Education programs. Classes are held both at the school and at various locations throughout New Hanover and Pender counties. These classes are designed to prepare individuals for employment and to upgrade workers already employed; in addition, classes are also designed to improve an adult's economic, social and cultural standing.

The Continuing Education Division also serves area industries and public agencies by providing training for their employees. Training under this division of the Institute can be offered at any time a need for such training is established. Full details can be obtained by contacting the Dean of Continuing Education.

Admission Requirements

Generally speaking, any individual who is 18 years of age or whose high school class has graduated is eligible for admission to continuing education classes. Applicants are usually admitted on the first come, first served basis. Some classes may have specific admission requirements. In such cases, the Director of Continuing Education programs will inform applicants of these requirements.

Expenses

Many of the continuing education classes are offered without charge to the students. In other classes, a $10.00 tuition fee is charged for academic and occupational courses. A $15.00 fee is charged for practical skill courses. Avocational courses require a $19.00 tuition fee. Persons 65 years or older will be exempt from fees provided there is available space.

Certificates

The Continuing Education Division issues certificates to those who complete a course satisfactorily.

CONTINUING EDUCATION COURSES

The Continuing Education Division offer courses in the following categories:

Academic
Occupational
Practical Skill
Avocational

Upgrading Training for Industry
Public Health and Safety (EMT, Fire, Rescue)

The types and frequency of these offerings are determined by the demand and interest in a given area of study. A sampling of courses under this heading would include:

Law for the Layman
Homemaking — Sewing and Food Preparation
Remedial English
Creative Art
Auto Mechanics
Computer Programming
Manual Language
Auto Body Repair
Quilting

Additional courses are offered as the demand becomes evident. Details of these and other courses may be obtained from the Director of Continuing Education.

HUMAN RESOURCES DEVELOPMENT PROGRAM

The Human Resources Development Program (HRD) is designed to provide carefully structured pre-vocational training/counseling and assistance in placement into permanent employment or further educational training for chronically unemployed and underemployed adults.

The primary objective of HRD is to help the jobless trainees reorient themselves to the world of work through recognition of self-assets and limitations, understanding the effect of his/her behavior on others, familiarization with problem-solving processes, and development.

HRD is the only educational program in the community college system which requires a one-year follow-up of program graduates. Since its introduction into the community college system, HRD has been the only tax supported educational program (in the public school, university, or community college system) which is funded on the basis of performance.

For further information concerning the program, please contact Human Resources Development, Cape Fear Technical Institute.

ADULT EDUCATION

The Adult Education Division of Cape Fear Technical Institute is primarily concerned with raising the educational level of adults. The Institute is prepared to provide training at all educational levels from

grade one (learning to read and write) up through high school equivalency. This training is provided through organized classes and through the school's Programmed Instruction Center.

Classes in adult education are organized as follows:

Adult Basic Education I—For those adults who have completed less than four grades of formal education.

Adult Basic Education II—For those adults who have completed grades 5-8 or who have completed ABE I.

High School Equivalency (GED)—For adults who want to complete their high school education.

The Programmed Instruction Center provides training for those who are not able to attend the organized classes. See Programmed Instructor Center.

ADMISSION REQUIREMENTS

Any adult who has a desire to raise his or her educational level and who is able to benefit from a course may enroll in the adult education classes.

EXPENSES:

There is no charge for the Adult Basic Education classes and only a small fee to cover the cost of instructional materials in the high school equivalency classes. The Programmed Instruction Center is also free.

HIGH SCHOOL EQUIVALENCY CERTIFICATE

The State of North Carolina, through the State Board of Education permits adults (18 years of age) to take the General Educational Development Tests, (generally referred to as "the High School Equivalency Examination" GED) at test centers throughout the State. Persons who make satisfactory scores on all five sections of the test are issued the High School Equivalency Certificate by the State Board of Education. This certificate is recognized by most industries, schools, and government agencies as meeting their requirement for a high school education. Cape Fear Technical Institute is a GED test center. The test is generally given three times each month; applications for the tests may be obtained from the Institute or from the office of any school superintendent.

The Institute provides training in the five areas covered by the examination both through organized classes and the Programmed Instruction Center.

NEW INDUSTRY TRAINING

One of the basic objectives of Cape Fear Technical Institute is to stimulate the creation of more challenging and rewarding jobs for the people of our area by providing a customized training service to new and expanding industries. Subject to only minimal limitations, this Institution, in cooperation with the Industrial Services Division of the State Department of Community Colleges, will design and administer a special program for training the production manpower required by any new or expanding industry creating new job opportunities in North Carolina.

This program includes the following services:

1. Consultation in determining job descriptions; defining areas of training; and in prescribing appropriate course outlines, training schedules, and materials.
2. Selecting and training of instructors. These instructors may be recruited from the company and from outside sources.
3. Payment of instructors' wages for the duration of the training program.
4. Provision of suitable space for a temporary training facility prior to the completion of the new plant, should such temporary space be required. This may be space with Cape Fear Technical Institute or leased space in the community.
5. Assumption of installation costs of equipment in the temporary training facility.
6. Payment for one-half the cost of nonsalvageable materials expended in the training program.

The purpose of this service is to help a new or expanding industry meet its immediate manpower needs and to encourage each industry to develop a long-range training program of its own to satisfy its continuing replacement and re-training needs.

For further details of this service, please contact the President of Cape Fear Technical Institute, Wilmington, North Carolina, or the Director of the Industrial Services Division, North Carolina Department of Community Colleges, Raleigh, North Carolina.

PROGRAMMED INSTRUCTION CENTER

The Programmed Instruction Center is an individualized, self-study center offering courses in many fields. It is open Monday-Friday from 8:00 AM to 10:00 PM. One or more coordinators are in the lab at all times to assist students with their studies. There are no schedules or homework, and students may enroll at any time.

Admission Requirements

Age: 18 years or older
Prerequisites: None

Expenses

Tuition or Fees: None

Programs of Study

1. Technical Institute and College Prep —
   Review math, reading, English or other subjects before entering or while attending a technical institute or college.
2. High School Equivalency Prep —
   Course work is available for the five areas on the exam — English, social studies, science, reading, and math. The G.E.D. is given monthly.
3. Prepare for college entrance tests (SAT), Graduate Record Exam (GRE), National Teacher Exam (NTE) and Armed Forces Vocational Aptitude Battery (ASVAB).
4. Job Training and Upgrading —
   Bank Teller Training and business courses.
5. Foreign Languages —
   Spanish, French, German, Italian, and others.
6. Teacher Certificate Renewal —
   Designing Effective Instruction.
7. General Studies —
   A partial list includes reading comprehension, phonics, English, vocabulary, spelling, math, algebra, geometry, business math, real estate math, bookkeeping, accounting, shorthand, chemistry, physics, electricity and electronics.

PRECURRICULUM NON-CREDIT REMEDIAL COURSES

Course Title			HOURS PER WEEK Class	Lab	Manipulative Lab	Quarter Hours Credit
CHM	010	Beginning Chemistry	0	2	0	1
ENG	010	English Grammar I	0	6	0	3
ENG	011	Reading I	0	6	0	3
ENG	020	English Grammar II	0	6	0	3
ENG	021	Reading II	0	6	0	3
ENG	030	English Grammar III	0	6	0	3
ENG	031	Reading III	0	6	0	3
ENG	040	Spelling Improvement	0	2	0	1
ENG	041	Phonics	0	6	0	3
ENG	051	Reading IV	0	6	0	3
MAT	010	Mathematics I	0	2	0	1
MAT	020	Mathematics II	0	4	0	2
MAT	030	Mathematics III	0	4	0	2
MAT	040	Basic Algebra	0	2	0	1
MAT	050	Basic Geometry	0	2	0	1
MAT	060	Basic Trigonometry	0	2	0	1
MAT	070	Mathematics IV	0	2	0	1
MAT	080	Algebra I	0	8	0	4
PHY	010	Introduction to Physics	0	4	0	2

Students are enrolled in the above remedial courses as determined by evaluative criteria.

See pages 182 to 183 for course descriptions.

PRECURRICULUM NON-CREDIT REMEDIAL COURSES

CHM 010 Beginning Chemistry: Selected concepts and facts that cover basic subject areas in general terms.

ENG 010 English Grammar I, II, III: A series of English courses comprising a complete grammar program at basic, intermediate, and advanced levels.

ENG 011 Reading I, II, III: A total audio-visual (A-V) reading system that covers comprehension, speed, vocabulary and communication skills at beginning, intermediate, and advanced levels.

ENG 040 Spelling Improvement: A basic course with emphasis on the meaning of words which teaches spelling by using a systematic method based on syllabication.

ENG 041 Phonics: A comprehensive A-V course covering vowels, consonant sounds and letters, blends, diagraphs, diphthongs, prefixes, suffixes, and spelling generalizations.

ENG 051 Reading IV: Programs designed to improve the student's ability to retain what he/she reads. Work is also done on vocabulary development, English usage, and spelling.

MAT 010 Mathematics I: A basic course in math covering whole number operations and their application.

MAT 020 Mathematics II: A general math course covering fractions, decimals, percents, and word problems.

MAT 030 Mathematics III: Contains topics in beginning algebra and helps student gain a basic foundation for more advanced work.

MAT 040 Basic Algebra: A brief introductory course effective for beginning students or as a review.

MAT 050 Basic Geometry: A brief introductory course effective for beginning students or as a review.

MAT 060 Basic Trigonometry: A brief introductory course effective for beginning students or as a review.

MAT 070 Mathematics IV: A short method for teaching the theory and application of square root.

MAT 080 Algebra I: This course gives a systematic, clear, and easily understood program of major concepts and skills of first year algebra.

PHY 010 Introduction to Physics: A general introductory course that presents basic theory and application.

DEVELOPMENTAL STUDIES

The Institute does make available developmental courses to assist students who are in need of additional academic assistance.

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